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carolina planning

vol. 3 no. 2, fall 1977

Introduction

The Housing and Community Development Act of 1974 marked an important shift in federal housing policy. Cities receiving community development grants now have increased responsibility for, and freedom regarding, what they do with these allocations from the federal government. The growing emphasis on existing housing and neighborhood conservation over new construction has led cities to search for strategies appropriate to local neighborhood conditions. Community development has also brought a broader focus. Localities must think not simply in terms of physical structures, but of neighborhoods as total environments encompassing social and fiscal as well as structural concerns.

For localities to deal with community development, it is necessary to consider such questions as what is a neighborhood, and what strategies can be employed to deal with neighborhood change. Each city must have its own policy stands regarding such issues as attracting the middle class back into the city, increasing housing opportunities for the poor, and preserving historic structures. Much of this issue of *carolina planning* is devoted to providing community development planners with information that would be of use in making policy decisions and in designing strategies to deal with particular local situations.

Chris Schubert Berndt discusses how the restoration of historic structures serves to provide urban housing as well as to stimulate other revitalization efforts. **Seth Weissman** looks at financial tools and choices for meeting low-income housing needs in Durham. **Ann L. Silverman** proposes the monitoring of neighborhood change as a first step in preventing the gross deterioration of urban environments. And, in a review of theories of planning the neighborhood, **Alan Mark Richman** finds traditional solutions inadequate to solve contemporary neighborhood problems.

In other articles, **Mark Horowitz** and **Tom Rogers** examine the controversy surrounding economic development in North Carolina; and **Joseph G. Jay** answers the questions many small-city planners have about the use of computers.

A new feature, *carolina forum*, begins with this issue. We invite practicing planners and active citizens to use *forum* to express their views on current planning issues and to report on recent accomplishments and activities in their communities and agencies. In this first *carolina forum*, **Robert M. Leary** calls for a position concerning the registration, licensing, or certification of planners, and **David R. Paulson** describes the scheme for central-city revitalization which is at work in Greenville, South Carolina.

Also new with this issue is our publication schedule. *carolina planning* will now be published in the spring and fall of each year. Subscribers are receiving the present Fall, 1977 issue instead of the Summer, 1977 issue. Volume numbers will continue to correspond to calendar years.

carolina planning is now in its third year of publication. We have been well received by the planning community in North Carolina. The focus of *carolina planning* on the often unique problems of the Southeast has been valuable in bringing people and ideas together. The battle for the financial viability of this magazine is underway with gratifying, but as yet, insufficient results. Our publication costs will be met in large part this year by subscription and sales income. The remainder will be made up by a supplementary award from the Z. Smith Reynolds Foundation of Winston-Salem, North Carolina. The award, made in the spring of this year, is but one of a series of contributions made generously by the foundation, and responsible for the birth and growth of this publication.

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carolina planning

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carolina planning is published semi-annually by the students in the Department of City and Regional Planning, University of North Carolina, Chapel Hill, under grants from the Z. Smith Reynolds Foundation of Winston-Salem, North Carolina, and the John Parker Trust Fund, Department of City and Regional Planning.

carolina planning welcomes comments and suggestions on articles published and will be happy to accept new material for future editions. Manuscripts should be typed with a maximum of 20 double-spaced pages, and become the property of *carolina planning*.

Subscriptions to *carolina planning* are available at the annual rate of $5.00 ($6.50 outside of North America). Back issues, when available, are $3.50 per copy ($4.25 outside of North America).

Communications, manuscripts, and subscriptions should be sent to: *carolina planning*, 103 New East 033A, Chapel Hill, North Carolina 27514.

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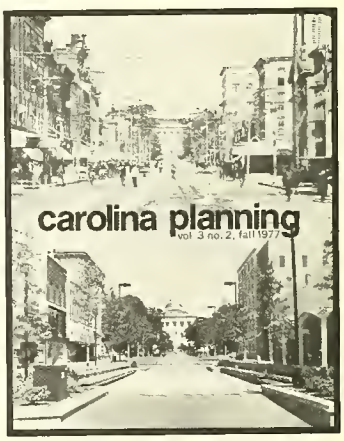

This Issue's Cover

Two photographs of Fayetteville Street, Raleigh illustrate changes that have taken place in North Carolina cities. The State Capitol looks out on horse-drawn carriages and trolley tracks in the top photograph, taken circa 1890, and on a tailored pedestrian mall in 1977. The early photograph appears courtesy of the North Carolina Collection, Louis Round Wilson Library, University of North Carolina. The 1977 scene is by Whitney A. Talcott, Raleigh.

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10 A Housing Reinvestment Strategy for Durham, North Carolina

Seth Weissman

Certain inner city neighborhoods, while in need of preservation and improvement, have little market attractiveness. The author suggests a strategy of reinvestment for a medium-sized southern city which would stabilize the market and allow for improved housing conditions in such neighborhoods.

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Ann L. Silverman

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Joseph G. Jay

Many small planning agencies have not developed computer systems because of apprehension about high costs, increased manpower requirements and preconceptions about the technology. The author explains why these fears are more fiction than fact and illustrates the benefits which can result from an in-house data processing and storage system. The process of establishing such a system is illustrated in a case study of the purchase and implementation of a mini-computer by the Durham City Planning Department.

45 The Distinction Between Economic Development and Economic Growth: Implications for North Carolina Development Policy

Mark R. Horowitz and Thomas C. Rogers

Horowitz and Rogers separate the determinants of wages into economic growth and economic development components and suggest the importance of the development component in understanding cross-state differences in wages. They find North Carolina's current development policies to be lacking because of an emphasis on economic growth without economic development.

Letters

Peak Load Pricing

Dear Editor;

There is another significant cost factor that needs to be considered in establishing electricity rate schemes besides that of variation in the time of demand necessitating expensive production facilities to meet peak loads (Miles Bidwell and Jean Bonnes, "A Peak Load Pricing Policy for N.C. Utilities," *carolina planning*, Vol. 3, No. 1, Winter, 1977). That factor is the areal distribution of demand that dictates transmission costs.

Picture a concentration of industry or a central commercial area, both requiring heavy use of electricity, contrasted to a wide areal spread of light residential and neighborhood business uses. The transmission facilities to serve the heavy concentrated use cost considerably less than those required for the lighter spread-out use. It is my impression that this situation was a primary factor in establishing bulk use rates lower than light use rates—the total cost for bulk use was lower because of the lower capital and operating cost of transmission facilities.

I know that this very same relationship formed the basis of bulk water rates being lower than light water usage rates in Greensboro, North Carolina, in 1955-56. In connection with the University of North Carolina's Institute of Government's annexation study of that city, I had the opportunity of reviewing a recently conducted study detailing all the various costs in order to evaluate and adjust water rates to reflect cost equitably. As it turned out, my review showed that even with lower bulk rates, the heavier users were still supporting the lighter users, the main reason being the extensive distribution costs to cover the wider spread of use of the lighter users (not just sprawl).

I venture to hypothesize that a similar circumstance may apply to electricity. If borne out, price schedules should reflect not only the time of demand factor, but the spatial distribution of demand factor as well. Perhaps heavy users are more spread out now, negating current applicability of the spatial factor. On the other hand, perhaps the siting and capacities of substations precludes the shifting of power in adequate amounts from one area to another, so that new transmission facilities are needed to serve new residential areas. More detail is needed on such land use, design, and cost factors before proceeding with rate structure revision. Because of such factors, different cities may need different types of schedules.

David Livingston McCallum
Pico Rivera, California

carolina planning *welcomes your comments on issues dealt with in the magazine. We reserve the right to edit all letters without altering the basic contents of the materials printed. Address your letters to: Editor,* **carolina planning**, *Department of City and Regional Planning, University of North Carolina, 103 New East 033 A, Chapel Hill, N.C. 27514.*

carolina forum

Editor's Note: **carolina forum**, *a new feature, presents reports of recent or ongoing planning activities and opinions on current planning issues. We welcome submissions to* **carolina forum** *from all interested persons—especially practicing planners in the Southeast.*

North Carolina Planners: License, Register, or Certify?

With the close of this 1977 session, the North Carolina General Assembly has not taken action which affects the question of whether planning or planners need to be regulated by the state. However, the lawmakers have taken some action to examine the need for and the operating characteristics of some of the boards and commissions set up in the past to regulate a plethora of occupations, ranging from physicians to auctioneers. This study, conducted by the Justice Department, is at its midpoint. When completed, it is expected to produce recommendations for adjustments in the composition and operating practices of the present boards and recommended guidelines for the establishment of any new regulatory bodies.

Arguments for and against professional licensing and regulation are numerous. There have been suggestions that the main result of establishing at least some of the boards has been to protect the interests of practitioners rather than protect the public from incompetents and charlatans. It has also been noted that the initiative for most legislation controlling professions came not from public clamor but from the efforts of the practitioners themselves. Furthermore, there have been hints that the usual policy requiring that only certified members of the profession be the only ones allowed to serve

on these regulatory boards provides a rich opportunity for conflicts of interest. As a solution to that suspected malady, there have been proposals put forward that would require representatives from outside the field to be seated on the regulatory bodies. Theoretically these "public" members would elevate the status of the bodies on which they sit and provide a broader range of views in deliberations and actions. On the other hand, it has been argued that it is not an especially difficult task to co-opt the "public" members—in fact, one comment was to the effect that six to eight months' service was all that was necessary to "brainwash" them.

With this brief background, it is appropriate to turn to the question of whether planning and planners should be subject to state regulation or a form of credentialling in order to insure the protection of the public health, safety, and general welfare. While the debate in North Carolina on this subject has been rather low key in the past, and the recent actions of the Justice Department and General Assembly would seem to encourage a short continuation of this period of calm, it is almost certain to escalate in the future. New Jersey and Georgia have licensing laws affecting planners, while Michigan has a registration law. The issue has recently surfaced in Florida and South Carolina; other states are also exhibiting signs of incipient upheavals. Tarheel planners should be prepared for this subject to erupt in the next couple of years.

Before further discussion of the issue, a brief review of the terms involved in the controversy is appropriate. Words like licensing, registration, and certification have widely differing meanings and their misuses will only complicate an already emotionally charged subject. Licensing is the control of the practice of an occupation, for instance planning, by excluding all but state license holders from the practice of that occupation. Registration, on the other hand, is the control by the state of the use of certain specific titles. In Michigan, for instance, the title "professional community planner" has been registered. Thus, a person in Michigan can still practice planning, but he or she cannot use the registered term unless the minimum standards of the state have been met.

Certification, as the term has been used in relation to planning, is a process by which a person is granted permission to use a descriptive term, such as Certified Professional Planner, after having taken and passed some sort of national certification examination. The certification process does not prohibit a person from practicing planning or calling oneself "planner" or even a "professional planner"; however, the term "certified professional planner" could be used only by those who satisfy the national certificate board of their competence and, presumably, their integrity. Advocates of this approach say it is analogous to the process by which an accountant becomes a Certified Public Accountant. The idea of applying a process used to certify accountants to the field of planning and to planners is a relatively new one, and considerably younger than the concepts of registration and licensing. There is still a lot of fuzzy thought connected with the concept, and a long road ahead until some of its ambiguities are resolved, such as: Who would appoint the examining board? What would be the content of the examination? Would existing practitioners be grandfathered in with no requirement to pass the exam? How would the process be financed? Would the several states accept the certification board's conclusion as to the qualifications of the examinees? And can planners ever agree to support this or any legislation concerning credentialling of themselves?

These and other issues relating to certification need attention. The most pressing is the apparent inability of planners to agree on most aspects of the situation. As Harry Truman said in another context, "If you laid them all end to end, they would point in all directions." I wrote recently that:

> It would be comforting to report that there is a fairly broad consensus about state control of planning and planners, but that comfort is denied. New Jersey has a licensing law, the enactment of which and the subsequent litigation thereover split the Chapter, while almost submerging it financially. Michigan has a registration law, which is the way the Florida Chapter is likely to go, if it has to go at all. Georgia now has a licensing law—enacted over the objections of the Georgia AIP Chapter. The Board of Directors of National AIP has rescinded its previous official stance in opposition to both registration and licensing; it now has no policy. This non-stance is viewed by some as a step forward, as it removes the Board as part of the opposition to some planners' efforts to get legislation passed. Now, while the Board may not be with them, it is not against them. Of such is progress fashioned. (Leary 1976)

The AIP Board was able to arrive at its policy of non-policy only in relation to licensing and registration; it has apparently not even progressed that far on certification, and is likely not to do so since the leading exponent for certification was recently defeated in a bid to assume high office in AIP. This AIP policy disarray is not unusual and is not restricted to credentials for planners; it infects many aspects of the organization. North Carolina planners cannot look to the national officers for leadership, or even a straightforward analysis on what are the appropriate training and qualifications for planners. We must deal with the issue as Tarheels, and not hang by our thumbs in pious hope that the issue will either evaporate or by some arcane process the national board will reverse its record of indecision and provide leadership and firm policy direction.

Often in the past, the question of state licensing and/or registration was thought to be primarily a concern of private practitioners, whose livelihood might be affected by state legislation dealing with planning. However, more and more planners outside the private planning sector now perceive such legislation as potentially affecting them. Professors of planning cannot remain aloof when a legislature appears to say that their students are not qualified to practice planning, as recently happened in Georgia. Planners in the public sector may be pardoned a bit of apprehension when they find that they are not qualified for another job, because they do not have the right license. Planning directors may be justifiably annoyed to find that the persons they may hire might not be equipped to do the job they wish done. When the bell of registration and/or licensing begins to toll, it tolls for us all. As planners, it is an issue we must come to terms with in the near future.

Robert M. Leary, President
Robert M. Leary Associates, Ltd.
Raleigh, North Carolina

Reference

Leary, Robert M. 1976. *NCAIP Newsletter*, 5(3).

Downtown Revitalization Through Public - Private Cooperation in Greenville, South Carolina

The plight of downtown Greenville, South Carolina, has not differed greatly from that of many other central-city areas throughout the country. Fifteen years ago, it was a bustling center of commercial and business activity. It housed four major department stores as well as dozens of offices and small retail facilities. Evening functions were as prevalent as daytime affairs. It was a Saturday tradition to shop downtown. However, with suburbanization and growth of retail malls, the importance of the downtown as a shopping district declined. In the early 1970's, two of the four downtown department stores fled to a climate controlled shopping center, as did numerous smaller businesses which traditionally rely upon the drawing power of larger establishments. In addition, many buildings in the central city became plagued by vandalism and neglect. There were often complaints of inadequate parking facilities and poor quality merchandising. Although it was to remain the hub of governmental, cultural, and banking concerns, the downtown's heyday as a commercial district was clearly passed by the early 1970's.

While these circumstances do not speak particularly well of the downtown's recent past, through the efforts of the City of Greenville and a group of private businessmen known as the Greenville Community Corporation, the future seems much more promising. Shortly after the 1976 reelection of Mayor Max M. Heller to a second term, downtown revitalization became a priority. With full support of the City Council, the services of Zuchelli, Hunter, and Associates, an economic consulting firm from Annapolis, Maryland, were engaged in order to update old plans, analyze existing market conditions, and recommend implementable solutions for downtown revitalization. From the outset, the objective of this analysis was to develop a program that would not only physically improve and beautify Greenville's central business district, but also provide a pervasive economic stimulus for the area. To this end, one of the first actions undertaken by the city was the establishment of a $2.15 million low interest rate loan pool in conjunction with local financial institutions and the Greenville Chamber of Commerce. Utilizing Community Development funds as an interest subsidy, low interest rate loans were made available to downtown merchants for rehabilitation of downtown buildings. In addition, participating banks also provided loans at lower than market rates for property acquisition and expansion of retail or wholesale inventories. During the loan pool's initial year of operation, a total of almost $475,000 in loans was approved.

While the loan pool is directed toward making immediate improvements, a $26 million dollar plan of action has also been developed and adopted by the City Council for changes which are to occur during the next several years. The physical plan, which was formulated by CHNMB-Lawrence Halprin and Associates, an urban design group from San Francisco, has two components. First, Main Street will be beautified. At the present time, Main Street is a four lane highway with parallel parking on both sides of the street. This wide expanse creates an environment which is totally dominated by the automobile and discouraging of pedestrian movement. In order to reassert the importance of the pedestrian, five blocks of Main Street will be narrowed to two lanes. In addition, diagonal parking will be installed and amenities such as comfortable and distinctive street furniture, attractive as well as functional lighting, and plantings for both shade and screening of automobiles will be added. Through vehicular traffic presently using Main Street will be funnelled to parallel arteries.

The second component of the program is the development of the Greenville Commons Area at the north end of Main Street. It is this aspect of the strategy that will provide the much needed economic catalyst for the downtown. The Commons will consist of a preleased office building of 100,000 square feet; a 300 room hotel; 45,000 square feet of retail space; a 55,000 square foot convention center; and parking accommodations for approximately 700 cars. These facilities will be physically coordinated and will surround an inner city park of about one acre. The park will be planted open space which is terraced and will rely heavily upon the use of water for visual stimulation. In addition to undertaking the Main Street improvements, the city will develop the convention center, open spaces, and parking facilities. A private developer will be responsible for the hotel, office, and retail construction.

The total cost of this project is $26 million dollars. Funding comes from three sources. First, the city has committed $7 million dollars from Community Development, general revenue, and city surplus funds, as well as revenue and general obligation bonds. Secondly, a developer will be responsible for contributing up to $13.5 million. Finally, and perhaps the key component of the program is the support of the local business community. As mentioned earlier, through the efforts of several local businessmen, the Greenville Community Corporation has been formed to secure funds for the revitalization effort. The group consists of representatives from most major employers in the Greenville area. Its forty-five person Board of Directors has committed the corporation to raising $4.25 million through the sale of common and preferred stocks, as well as through the solicitation of grants and gifts. Approximately $3.5 million of this money will be used as equity funding in the construction of office, retail, and hotel spaces. Another $750,000 will be contributed to the city for its use in beautifying Main Street. It cannot be emphasized too strongly that without these funds, the project would not be possible. The private money has not only encouraged the city to commit its resources, but will undoubtedly help reverse the negative image that for so long has afflicted the central city.

The revitalization effort in Greenville is a bold step—one that has taken two years to plan, and one that will take at least that length of time to execute. The end product will be a downtown which provides both an improved physical as well as economic environment. Its success will depend not only upon the support of the public sector, but more importantly on the psychological and economic support of the private sector. Without the harmonious marriage of these two sectors, the fate of downtown Greenville would indeed be less promising.

David R. Paulson
Community Development Planner
City of Greenville, South Carolina

Chris Schubert Berndt

Historic Preservation and Urban Housing Policy

Historic preservation is broadly concerned with maintaining the visible presence of history in our lives through a concerted effort to preserve culturally significant aspects of the built environment. Through their diversity of form and function, older buildings and areas provide continuity between the past and the present, contribute to the development of an aesthetic townscape, and evoke a sense of pleasantness and amenity. Such design considerations have traditionally had little relationship to the development of housing policy. Under the impact of a new emphasis on neighborhood conservation, this situation is rapidly changing. A realization that the built environment is a valuable asset must include an awareness of the design features and aesthetic value of the existing housing stock. In particular, housing strategists should recognize that areas of historic and architectural quality may appeal to certain portions of the housing market.

Historic preservation can play an important role in achieving the objectives of a local housing policy which stresses neighborhood revitalization. This article suggests the growing importance of preservation as a housing strategy and illustrates how preservation in one North Carolina city, Wilmington, has helped to stimulate public investment and revitalization in the central city.

Attractive design features draw people to Old Wilmington.
Photo by Bruce Stiftel

Early Preservation Efforts

The historic preservation movement initially focused on the conversion of individual buildings and landmarks into museums and cultural centers. By the late 1950's, the scope of preservation had widened to encompass an interest in restoring historic urban neighborhoods and districts, such as Georgetown in Washington, D.C., Ansonborough in Charleston, South Carolina, and Old Savannah, Georgia. With infusions of private sector investments, preservation activity turned decayed central-city neighborhoods inhabited by lower-income groups into stable higher-income communities.

While they may be criticized today for their displacement effects, these projects point to three conclusions: 1) the normal operation of the private market has almost inevitably resulted in the deterioration of historically and architecturally significant structures; 2) local governments have not been sufficiently aware of the value of historic areas, or capable of intervening in the process of decay; and 3) without the financial interest of higher-income groups, structures of great historic and architectural value would have been lost. Although early preservation efforts were basically elitist, they also served a public purpose in preserving objects of our cultural heritage.

Historic District Designation

Private sector investment typically occurs only after public designation of a historic district. There are two types of historic districts: those placed on the National Register of Historic Places, and those

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adopted by local ordinance, usually pursuant to state enabling legislation. While local districts afford greater protection to an area, National Register designation also has merit.

The National Historic Preservation Act of 1966 authorized the Secretary of the Interior to establish and maintain a register of historic districts, sites, buildings, structures, and objects.[1] National Register designation is primarily an honorary status, but does confer one tangible benefit. The Advisory Council on Historic Preservation is required to review all federal or federally-assisted projects which affect National Register properties. Although the council has no legal power to halt a project, its findings of adverse effect carry considerable weight.

The number of state statutes authorizing local governments to establish historic districts has grown during the past ten years. North Carolina's enabling legislation, passed in 1971, is representative of these statutes.[2] A municipality may designate historic districts by amendment to its zoning ordinance. The area may be treated as a separate-use district, or may be an overlay district superimposed on regular zoning districts. A historic district commission is empowered to approve plans for exterior alterations or new construction and to impose a ninety-day delay period before a building can be demolished.

With the advent of public regulation, it became necessary to establish criteria defining the term "historic." The most widely accepted criteria are those used to evaluate National Register nominations. These criteria stress the "quality of significance in American history, architecture, archaeology, and culture" and the "integrity of location, design, setting, materials, workmanship, feeling and association." Historic places or objects must be associated with historic events or historic persons; or embody distinguishing characteristics of an architectural type, period, or method of construction; or represent the work of a distinguished architect or builder; or be archaeological sites of

"With the advent of public regulation, it became necessary to establish criteria defining the term 'historic.'"

scientific importance.[3] The workability of the system depends on the informed judgment of architectural historians. Within the narrow range of the specified criteria, however, there may be varied opinions on what is worthy of preservation due to the nature of changing tastes and values.

The Changing Nature of Preservation

The gulf which formerly separated historic preservationists from housing rehabilitation and urban renewal specialists is narrowing. Too often, housing strategists have lacked an awareness of the design ramifications of their rehabilitation work, while preservationists have been ignorant of market economics and federal housing programs. The preservation movement has recently been evolving toward a new stage which centers around the desire to maintain viable, livable central-city neighborhood environments. Many have labeled this wider focus "neighborhood conservation" in an attempt to de-emphasize the elitist associations of historic preservation and to add social and economic considerations to the traditional design orientation.

No consensus has been reached concerning criteria for defining the characteristics of a conservation neighborhood. The National Register is under some pressure to expand its criteria to include a new category of "conservation areas." Suggestions for expanding the criteria often focus on the design concepts of "special charm or character," the overall effect achieved from the grouping of buildings and spaces, and the sense of continuity and historical development that older neighborhoods may exemplify. Some suggestions, however, attempt to interrelate design and socio-economic factors. The Task Force on Land Use and Urban Growth (1973, p. 23) has recommended that National Register criteria be broadened to include urban neighborhoods which exhibit a "mix of uses," a "vitality of street life," and "a physical integrity."

"The gulf which formerly separated historic preservationists from housing rehabilitation and urban renewal specialists is narrowing."

Using the Task Force's criteria as a base, Houstoun (1975, pp. 25-6) of the U.S. Department of Housing and Urban Development, proposed a comprehensive set of evaluation criteria. These criteria include:

- the utility and attractiveness of an area due to the overall effect of its structures and spaces;
- the presence of a variety of facilities and activity opportunities (housing, employment, shopping, recreation, and education);
- association with groups of residents who have contributed to the city's development (i.e., ethnic heritage);
- a special activity associated with the area, such as central markets, wharves, or educational facilities;
- a sense of place enhanced by natural or urban features, such as canals or rivers, hillsides, vistas, parks or public squares; and
- a clear sense of the area as a place with definable boundaries.

Restoration is currently taking place in the Tarboro, N.C. Historic District. Photo courtesy of E. Watson Brown, Town of Tarboro

In stressing viability and utility in addition to the traditional preservationist concerns of beauty and history, Houstoun believes that a basis for rapprochement exists between urban redevelopment specialists and historic perservationists.

Government Policy and Preservation

Federal housing policy has been shifting toward an emphasis on the rehabilitation of the existing housing stock within the framework of a neighborhood conservation strategy. Although federal housing programs have long included a rehabilitation component, they have largely stressed the production of new housing units. The objectives of the Housing and Community Development Act of 1974 include both the conservation of the nation's housing stock and the "restoration and preservation of properties of special value for historic, architectural or esthetic reasons."[4] Guidelines for the mandated housing assistance plan require "the restoration and rehabilitation of stable neighborhoods to the maximum extent possible," pursuant to a congressional finding that "policies designed to contribute to the achievement of the national housing goal have not directed sufficient attention and resources to the preservation of existing housing and neighborhoods."[5]

Objective Six of the 1974 act supports the adoption of a local housing strategy which encompasses both the improvement of lower-income housing conditions and the attraction of higher-income groups back to the central city. It calls for:

> . . . the reduction of the isolation of income groups within communities and geographical areas and the promotion of an increase in the diversity and vitality of neighborhoods through the spatial deconcentration of housing opportunities for persons of lower income *and the revitalization of deteriorating or deteriorated neighborhoods to attract persons of higher income.*[6] *(emphasis supplied)*

The 1974 act expresses newly emerging directions in federal housing policy and provides a guiding framework for local revitalization efforts.

This analysis assumes that local central-city revitalization policy includes the objective of attracting middle- and upper- income groups back to the city. Little attention has been given to the kinds of rehabilitated housing that might appeal to these groups. Local government officials need to recognize that historic preservation can play a major role in attracting middle- and upper-income residents to the central city. Whether they be areas of traditionally defined "historic quality" or areas of "special charm and character" as identified by the new neighborhood conservation approach, certain neighborhoods of high aesthetic and design potential can appeal, or be upgraded to appeal to selected portions of the housing market.[7] This assertion contradicts an accepted notion of housing market dynamics, namely, that the aging housing stock is physically obsolete and cannot satisfy the residential preferences of middle- and upper-income households.

Residential Preferences

The obsolescence image depicts decline as the result of the market consequences of a taste for suburban living. Aging inner-city housing units cannot satisfy consumer preferences for low density and greenery. Housing rehabilitation programs, improved city services, and related neighborhood support programs will not stem the outward migration. The only viable alternative is demolition and eventual redevelopment (Grigsby 1975, pp. 197-98). If this image is an accurate one, the federal strategy of improving housing conditions for lower-income groups while simultaneously revitalizing neighborhoods to attract higher-income groups has little validity.

Some evidence exists to refute the obsolescence image and to support the contention that historic areas can appeal to middle and upper-income households and attract them to the central city. Surveys of planning officials and realtors conducted by the Urban Land Institute in 1974 and 1975 document a demand for older housing in central-city historic areas among single persons and young married couples with few or no children who tend to have middle to upper incomes and professional occupations. These surveys constitute the first evidence to support sentiments that the middle class is returning to the central city.

The 1974 survey found that renovation is being undertaken in the middle- and upper-income housing market by "aggessive young residents" who "appreciate the architecture and charm of the older houses and neighborhoods" (Priest and Black 1974, pp. 25, 28). After a series of workshops held in February 1975 by the Urban Land Institute in which

participants reported that "the most significant element of current private-housing market activity in central cities was the rehabilitation of older houses, particularly . . . in historic districts," the institute's research division undertook a more detailed study of this rehabilitation phenomenon (Black 1975, pp. 4-7).

Based on the results of a mail and telephone survey of 260 central cities with populations over 50,000, the institute estimated that 124 cities (48% of the sample) are experiencing some degree of private-market housing rehabilitation in older deteriorated areas. It was hypothesized that since 1968, about 54,600 units have been renovated as the result of private sector activity in these cities. Sixty-five percent of the cities had activity in officially designated historic areas; thirty-five percent were in "non-historic" areas. These neighborhoods tend to be relatively small areas (under 500 units), consist of predominately single-family units (around 80%), and are located close to the central business district.

"Those segments of the market to whom rehabilitation in central cities appeals are increasing in size nationally."

Downs advises private rehabilitation investors to locate their efforts in areas with the following features (1976, pp. 69-70):

- a housing stock with attractive design features, such as Victorian housefronts, stained glass windows, fireplaces, skylights, intricate molding, and wooden floors;
- local historic district or architectural review board regulations which protect the area's character;
- a high percentage of owner-occupants, or the presence of a neighborhood organization promoting homeownership;
- location near potential "anchors," such as parks, waterfronts, downtown, or universities;
- local government commitment to neighborhood improvements;
- accessibility to centers of shopping, dining, and entertainment which appeal to "adult-oriented" households.

These factors are congruent with the criteria for neighborhood conservation areas outlined by Houstoun and the characteristics of renovation neighborhoods studied by the Urban Land Institute. Portions of the central-city housing stock which possess some or all of these features are likely to be successful candidates for middle- and upper-income housing rehabilitation.

Trends Affecting the Market

The 1975 Urban Land Institute study cautions that a substantial movement back to the central city has not yet occurred. However, several current trends may increase the future demand for centrally located housing units: rising fuel costs and predictions of energy shortages; the skyrocketing costs of new housing construction; moratoriums on suburban development; the growth in office space in central-city areas; and certain demographic trends which point to a great increase in childless households (Black 1975, p. 3). Of these factors, changing demographic trends will probably have the most immediate impact on the housing market in the central city and on the demand for housing in historic areas.

Those segments of the market to whom rehabilitation in central cities appeals are increasing in size nationally. From 1970 to 1974, the number of households of married couples or related adults without children increased by 2.7 million to 25.3 million households; this increase represents 71% of the total increase in the number of all types of families since 1970. Single- and unrelated-individual households increased from 11.9 million households in 1970 to 14.9 million in 1974. Combining these two groups, adults-only households numbered 40.2 million, 57% of the total households in the United States in 1974. Between 1960 and 1970, central cities gained only 4% in residents in all occupational groups nationally, while central city residents in professional, managerial, and technical fields increased by 26% (Black 1975, p. 8). It appears there is a large potential market for rehabilitated housing.

Old Wilmington

The Old Wilmington historic district is a good example of the dynamics of recent private sector rehabilitation in historic areas. The thirty-five block residential district contains numerous buildings of national, state, and local historic significance whose distinguished architecture spans the range of late eighteenth and nineteenth century styles. Bounded on the west by the Cape Fear River, and on the north by the central business district, the historic area enjoys an attractive central location (see Figure 1).

By the late 1950's, a group of local citizens became concerned over rising levels of housing deterioration and demolition. Like many old central-city neighborhoods, the area's original well-to-do population had left and lower-income tenants had moved in. The rapid development of Wilmington's shipyard industry during World War II resulted in an influx of workers in search of cheap housing. Absentee landlords obligingly converted large old houses into rental units. Major traffic arteries brought high volumes of traffic to the neighborhood, while urban renewal and active code enforcement resulted in the loss of many buildings.

The enactment of a local historic district ordinance in 1962, since readopted to conform with

state enabling legislation, marked a turning point in the life cycle of the neighborhood. A Board of Architectural Review was established to judge the appropriateness of proposed alterations, construction, and demolition of buildings, providing a framework for the protection of the district's historic and architectural character.

In 1966, the Historic Wilmington Foundation (HWF), a private non-profit corporation, began to buy and restore endangered historic buildings in the district. HWF also actively promotes and markets the neighborhood. Annual house tours, special events, and media publicity keep Old Wilmington in the public eye and encourage private-market renovation. HWF assists homebuyers with technical advice on the various aspects of purchasing, financing, and rehabilitating historic houses. A neighborhood organization, Residents of Old Wilmington, Inc., was formed in 1973 to organize the district's residents and lobby for neighborhood improvements. The city of Wilmington employs a preservation planner to guide local revitalization efforts.

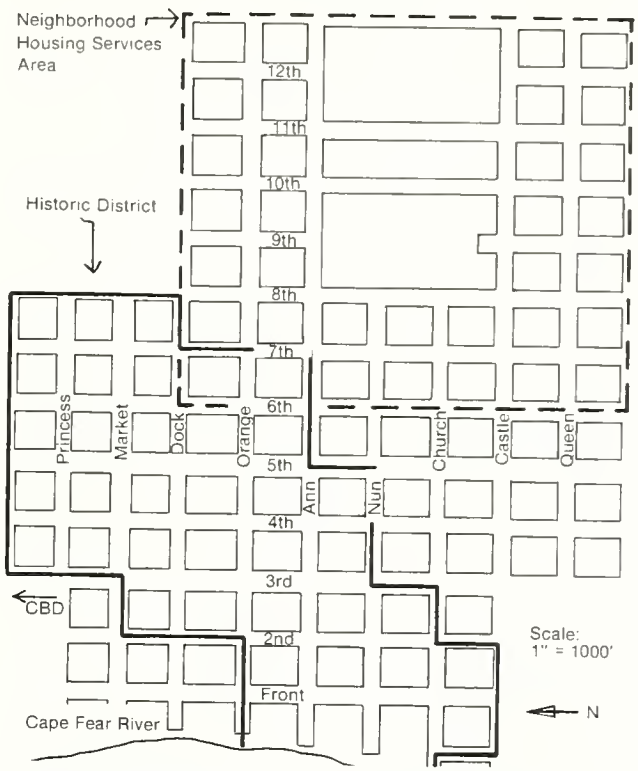
Today the historic district is becoming a viable middle-class neighborhood. Although rehabilitation activity developed slowly after historic district designation in 1962, the pace has rapidly accelerated during the 1970's. As of 1970, about 65% of the structures were single-family units, but less than 50% were owner-occupied. The area was over 90% white, and median income was $5,300. Since that time, the historic district has attracted younger, middle-class homeowners. Rehabilitation activity is visibly present on many streets, and property values are beginning to rise (U.S. Department of Housing and Urban Development 1975, pp. 128-129; Herman 1977, Appendix B).

Initially favored because of its strong links to the CBD and the waterfront, currently the historic district is itself forming an "anchor" for central city revitalization. Immediately adjacent to the east, an area selected for a Neighborhood Housing Services (NHS) demonstration program will be the target of concentrated rehabilitation activity. The NHS program will promote lower-income homeownership by encouraging residents, lenders, and government officials to act together in the revitalization process. In a recent paper addressing the selection of the first blocks for rehabilitation in the NHS area, University of North Carolina planning students considered the impact of the historic district on the NHS area (Cox *et al.* 1977). They concluded that the preservation effort could have positive spillover effects on the NHS area, but emphasized the need for independence from the historic district to encourage neighborhood commitment and pride.

"Initially favored because of its strong links to the CBD and the waterfront, currently the historic district is itself forming an 'anchor' for central-city revitalization."

Figure 1

The Historic District and Neighborhood Housing Services Area of Wilmington, N.C.



The presence of a strong market for central-city housing is also spurring revitalization plans for downtown Wilmington. As the *Report of the Mayor's Task Force for Revitalization in Wilmington* recognizes, the upgrading of the historic district and NHS areas provides "a valuable market for downtown services. . . . residential rehabilitation and commercial revitalization of the CBD are complementary activities" (City of Wilmington 1976, p. 5). A Downtown Development Board will be created to coordinate, promote, and market plans for new development and the rehabilitation of existing commercial buildings. Private-market investment in Wilmington's historic district has demonstrated the feasibility and attractiveness of rehabilitated central city housing, altered traditional consumer attitudes toward the central city, and is now stimulating public investment activity in other closely linked areas.

Implications for Urban Housing Policy

Historic preservationists and urban housing strategists are converging on the concept of neighborhood preservation. The inputs of both groups are needed in the formulation of programs to revitalize central cities. Such programs should include strategies to encourage and strengthen the potential market demand for centrally located housing of historic and architectural quality.

Planners and policy makers can begin to take design and aesthetic factors into account when

delineating neighborhoods for public programs. Preservationists have used architectural surveys to establish an information base for decision making, to educate the public, and to publicize and promote their objectives. Housing strategists should use a similar approach.

Local officials should identify areas of historic or architectural value, or areas with special distinguishing characteristics (as outlined by Houstoun and Downs above). These surveys should serve as one input into the development of comprehensive local housing strategies. The surveyed areas should be assessed for their attractiveness or potential attractiveness to the desired residents (current or future) as determined by local objectives and conditions. Neighborhoods suitable for preservation or conservation should emerge from this process. The distinctive qualities and features of selected neighborhoods should be promoted and publicized, using the survey information as a marketing tool. Identifying and marketing the positive features of central-city neighborhoods can begin to reverse the psychology of disinvestment, encourage voluntary upgrading of properties, and alter the attitudes of key decision makers (Ahlbrandt and Brophy 1975).

In some cases, an approach based on a neighborhood survey, a comprehensive housing strategy which includes a preservation component, and aggressive marketing may be sufficient to generate private investment. Generally, however, local officials will need to integrate these mechanisms with other key inputs: citizen involvement, public investment in capital improvements, and financial institution commitment. A small-scale demonstration program aimed at middle- and upper-income households may energize latent demand and stimulate the entry of private-market forces.

Ironically, as rehabilitation attains greater economic viability, the displacement of lower-income families may lessen its political feasibility (Downs 1976, p. 72). Many cities may shy away from the activist stance advocated above, preferring to ignore the emerging return of the middle class to the central city, although welcoming the increased tax revenues gained from property improvements. Either way, the displacement issue must be squarely faced. When preservation is included as one component of a comprehensive housing strategy, local policy makers may then continuously explore possible conflicts between the objectives of improving lower-income housing conditions and attracting higher-income groups to the central city.

"Ironically, as rehabilitation attains greater economic viability, the displacement of lower-income families may lessen its political feasibility."

Local revitalization strategists need to monitor the newly developing residential preference for older, architecturally interesting housing to encourage neighborhood upgrading in potential areas of market demand, to avoid investment of public money in areas for which sufficient market demand already exists, and to mitigate any harmful displacement effects. The Wilmington example suggests the positive impact which preservation may have on central-city revitalization.

Notes

1. 16 *US Code* §470 (1970).
2. *NC General Statutes* §160-A-395 to 399 (1976).
3. 36 *Code of Federal Regulations* §60.6 (1976).
4. 42 *US Code* §5301 (Supp. V, 1975).
5. 42 *US Code* §5304, §1441a (Supp. V, 1975).
6. 42 *US Code* §5301 (Supp. V, 1975).
7. It is assumed that the aesthetic concern which historic preservation connotes is not as important to lower-income households, as they are hard pressed to secure standard-quality housing. Historic preservation and low-income housing are not necessarily incompatible, if preservation programs can provide standard housing while also preserving valuable buildings.

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A Housing Reinvestment Strategy for Durham, North Carolina

Providing decent housing for our nation's urban dwellers remains one of the greatest problems our cities face. After decades of innumerable programs aimed at improving housing conditions, the problems not only persist, but have grown worse. With our cities increasingly occupied by the poor, the aged, and others with little mobility or living choice, the provision of decent housing is no longer viewed merely as a challenge to our ingenuity and humanity, but more as a complex problem integrally related to the ultimate survival of cities themselves.

During the last decade, in particular, we have witnessed the loss of hundreds of thousands of structurally sound housing units as city neighborhood after neighborhood has fallen prey to deterioration and housing market breakdown. This phenomenon has heightened significance since older housing can only be replaced at today's prohibitive building costs. Because of these economic constraints, older units will have to play a major role in filling the housing needs of our country. The necessity of maintaining and preserving this resource becomes critically important, and inextricably related to the future quality of life in urban America.

If cities are to remain decent places to live, an atmosphere must be created that is conducive to substantial amounts of reinvestment in older neighborhoods. As used here, reinvestment refers to provision of capital for housing rehabilitation programs in deteriorated neighborhoods, and the array of public services which must accompany any successful rehabilitation effort. The trend of planners to encourage such reinvestment has occurred largely in the context of broader strategies aimed at neighborhood preservation (HUD 1975).

According to Sternlieb, preservation is an all-inclusive term that refers predominantly to the rehabilitation of housing, but also includes demolition, reuse of space, some new construction, and a series of socio-economic strategies (Greendale and Knock 1976, p. 28). Neighborhood preservation strategies have enjoyed their greatest successes in the area of historic preservation. However, there is an important difference between historic preservation efforts and other types of preservation, in that historic preservation generates a middle- and upper-class demand for housing in the target neighborhood. The real battleground for saving our inner-city housing stock will probably not be these areas with historic significance, but the far more numerous neighborhoods where there is little demand for housing, no real incentives for investment, and where preservation will benefit only those people already living in the area.

The successes in the historic preservation field should not cause one to overlook the tremendous difficulties to be encountered in other types of preservation activity. Part of the problem is that local preservation programs directed at the most debilitated housing stock are often developed in reaction to federal funding requirements. In many respects, this results in an acceptance from on-high of the basic approach to housing problems, or at least predisposes programs to certain attitudes and assumptions. With a federal mind-set having already been prescribed, local planning efforts are at times lax in conducting independent and rigorous assessments of housing problems responsive to local market peculiarities. Specifically, planners must spend more time understanding: 1) the nature and causes of housing problems in particular target neighborhoods; 2) the types of coordinative efforts needed to conduct a housing reinvestment program; and 3) the importance of realistic expectations in a reinvestment strategy.

This article attempts to develop a strategy for reinvestment that addresses the most serious of our housing problems: the preservation and improvement of dilapidated housing in neighborhoods with little market attractiveness. By definition, the goals and objectives of such a strategy must be far more modest than with a historic preservation program. To a large degree, housing in these blighted areas will never be extremely desirable. At best, we can hope that market conditions can be stabilized in such a way as to provide safe and decent housing for community residents. The primary goal of a reinvestment strategy should be to create a mechanism that will: 1) allow homeowners to bring their properties up to code standards while maintaining homeownership; and 2) encourage investor-owners to eliminate substandard housing conditions without substantially raising rents.

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Emphasis is placed on housing reinvestment because "neighborhood revitalization depends upon the existence of a viable housing market" (Albrandt and Brophy 1975, p. 26). Although certain aspects of a broader neighborhood preservation strategy are not discussed, this does not mean that they are not equally as important. Housing rehabilitation programs can ultimately be successful only if accompanied by city efforts to enhance positive perception of neighborhoods. This can be achieved through visible capital improvements, upgrading service delivery, social and economic development, and actively involving neighborhood residents in the planning process.

Under these constraints, what types of programs, policies, and regulations can be initiated at the local level to improve housing in these deteriorated areas? This article offers one solution through the examination of housing problems in Durham, North Carolina. Housing market conditions are discussed, followed by a brief description of the city's efforts in the housing reinvestment area, and a proposed strategy for stimulating such reinvestment. Because Durham is fairly typical of a medium-sized southern city, this article should be of particular interest to other planners working with housing problems in the South. Although housing problems are national in scope, the unique local characteristics of the Durham housing market (and presumably of markets in other southern cities) cause the reinvestment issue to be shaped much differently than has traditionally been the case in larger northern cities. To a certain degree, this is an indictment of federal programs whose perception and approach to housing problems is often oriented to these larger metropolitan housing markets. In any case, the unique conditions in Durham afford the city an opportunity to be more flexible in proposing reinvestment strategies than is possible elsewhere.

> "At best, we can hope that market conditions can be stabilized in such a way as to provide safe and decent housing for community residents."

Background on the Durham Housing Market

Like many southern cities, Durham has serious housing problems. Lester Salamon, in a recently completed study of Durham's housing market, found that 20% of the stock is in substandard condition (Salamon 1976, p. vi). The supply of vacant housing units is limited, with the problem being particularly acute in the renter-occupied stock. While 54% of all of the city's housing units are renter-occupied, 75% of all of the substandard or deteriorating stock is renter-occupied.

Housing found in Durham's Community Development Area

Photo by Pat Jenny

Salamon's study reveals, however, that the characteristics of Durham's substandard housing market are far from typical. Much of the substandard housing in the city is relatively new, with 40% having been built since 1939 (Salamon 1976, p. 2). Unlike larger northern cities where tenement structures are common, 96% of all of Durham's substandard units are either single-family residences or duplexes (Salamon 1976, p. 5). It is generally recognized that these types of units can be rehabilitated with greater flexibility than can larger structures (Stegman and Sumka 1975, p. 25). The Durham Housing Assistance Plan of 1975 estimated that 93% of all substandard units were capable of being rehabilitated. However, this figure probably overstates the situation. Salamon found that "a substantial share of Durham's housing stock was built to below-code standards to begin with, raising serious questions about the possibilities for rehabilitation and upgrading"(Salamon 1976, p. 2).

Durham's substandard units are also dispersed over a relatively wide geographic area. The ten "substandard housing areas" identified by the City Planning Department as having the largest concentrations of deteriorated units contain only 40% of all of the city's substandard houses (Salamon 1976, p. 6). Within these substandard housing areas exists a healthy mixture of both standard and substandard housing. This contrasts sharply with larger cities where there are often vast homogeneous sections of substandard units. Durham might be able to take advantage of this phenomenon by promoting housing rehabilitation in neighborhoods containing significant amounts of standard units. This might give neighborhood improvement efforts a greater chance of success, since they would be conducted in areas where elements of a more stable housing market are already present.

From the investor side, the Durham substandard housing market is economically more viable than in many larger cities. However, present indications of market weakness have serious implications for the future. Ownership of Durham's substandard rental housing market is stratified, with a small group of landlords in control of 50-60% of all of the units (Salamon 1976, p. 9). Although the worst housing tends to be owned by these larger concerns, 62% of all landlords own five or fewer substandard rental units (Salamon 1976, p. 8).

The typical owner of rental housing in Durham is elderly, white, a long-time Durham resident, and an amateur landlord having a non-real estate-related occupation, who has entered the market in the last two decades largely for investment purposes (Salamon 1976, pp.11-13). Absentee ownership, a common problem in larger cities where owners either cannot be found or reside in a different state, is not a major concern in Durham.

Unfortunately, investment opportunities in the Durham substandard housing market are lacking. Investor-owned properties usually have positive cash flows, with investor-owners typically being able to return about 7½% on invested capital. In Durham's substandard housing market, this figure drops to a 4½% return to present value (Salamon 1976, p. 32) (see Figure 1), which is as much as three or four times less the return many new landlords would expect in a successful real estate endeavor. It is understandable why investor-owners are unwilling to invest capital in these substandard properties when they can get as large a return on their money by placing it in the bank without any risk.

As might be expected, incomes of tenants in substandard units are low. As Ahlbrandt and Brophy noted in their book on neighborhood revitalization:

> If incomes are low, landlords, in particular, may not have an incentive for re-investment because their existing clientele may not be able to pay additional rent to cover the cost of the investment. Landlords will only be motivated to upgrade their housing if they can reasonably expect to rent to tenants at higher levels and thereby recapture their investment (1975, pp. 25-26).

Figure 1
Cash Flow Statements for Substandard Rental Housing Units in Durham

Item	1974	1973
Receipts	$695.00	$676.17
Management Fee	$ 60.25	$ 60.00
Property Tax	85.25	85.87
Insurance	27.75	27.75
Misc.—Exterminator, etc.	30.00	18.00
Sub-total, Fixed Costs	203.25	191.12
Repairs	125.50	110.50
Sub-total Expenses	-328.75	-301.62
Profit (Loss)	366.25	374.55
Profit Rate	52.7%	55.4%
Return on Invested Capital ($5,000)	7.3%	7.5%
Return on Present Value ($8,500)	4.3%	4.4%
Return on Assessed Value ($5,130)	7.1%	7.3%

Because of these unfavorable market conditions, investor-owners often face a dilemma. They may allow their properties to deteriorate slowly while not raising rents, or invest heavily in a rehabilitation effort while trying to raise rents substantially to repay the rehabilitation loan. A "sit-tight" attitude with respect to these properties is understandable given tenant bitterness toward rent increases and investor-owner pessimism concerning their ability to repay a loan.

The positive cash flows in the substandard segment of Durham's market are due in part to the low property taxes in the city (about 12.3% of gross receipts, as compared to tax rates of 15-21% in larger cities) (Salamon 1976, p. 26). Low tenant turnover (average length of tenancy being close to six years) and low vandalism rates also contribute to the positive returns, as well as to greater stability in the market (Salamon 1976, p. 23).

Most significantly, substandard properties in Durham have continued to appreciate in value (although at a rate of only 3-4% a year), with resale values around eight times the rent rolls (Salamon 1976, p. 32). This has very positive implications for a housing rehabilitation strategy, and contrasts sharply with segments of larger inner-city markets. In Baltimore, substandard properties can be purchased for as little as twice the rent roll (Stegman and Sumka 1975, p. 211), and even massive rehabilitation efforts have resulted in little or no property value appreciation. Insurance and mortgage money are also available to investor-owners in Durham. According to Stegman and Sumka, the availability of mortgage money is generally a sensitive barometer to the future of the housing market (1975, p.187).

Unfortunately, current interest rates are such that new purchasers of substandard units would have great difficulty meeting financing charges with the net rental incomes from their properties. Ownership of many of these properties will be changing hands ..ı the not too distant future, with 40% of the investor-owners over sixty-five years of age and another 46% between forty and sixty years of age (Salamon 1976, p. 12).

It can be presumed that there will be major changes in this sector of the housing market, either in terms of falling resale values, increased rents, or decapitalizing or "milking" properties by securing high profit yields through neglecting needed maintenance.

Durham is currently involved in trying to rehabilitate substandard housing in target neighborhoods through its Community Development (CD) Block Grant program. Out of a total CD budget of $2.3 million in 1975-76, the city designated over

$800,000 for housing rehabilitation work (Goldberg 1977). Unfortunately, due to administrative difficulties, only a small amount of the allocated funds were actually spent (Herman and Ellis 1977). Future efforts aimed at rehabilitating Durham's substandard housing stock should continue to focus on community development target neighborhoods. These areas, containing the largest concentrations of low-income residents and substandard housing units, are eligible to receive the vital federal assistance so important in financing neighborhood improvement efforts.

A Housing Reinvestment Strategy for the Durham Community Development Area

Improving the condition of housing in the Durham CD area will involve the implementation of a coordinated series of policies and actions. The director of a housing reinvestment program must continually insure the maximum participation of community residents, local officials, lending institution representatives, and planners in every phase of the reinvestment project. Neighborhoods die largely as a result of being neglected. They are revived only when a renewed spirit and collective sense of commitment to the neighborhood are generated among the major actors affecting the community's viability.

The major problem in a reinvestment effort, after financing arrangements have been made, is getting the first few people to undertake the actual housing rehabilitation work. Although the majority of home and investor-owners might agree in principle to undertake improvements, very few may want to risk investing large amounts of capital in a deteriorated neighborhood unless their investments are secured by the firm assurance that the risks are going to be shared by everyone in the community. Planners must direct this "wait and see" attitude toward reinvestment in a manner that will get everyone to jump in at the same time. A housing reinvestment program can be unsuccessful even if all of the residents in a given community participate, but the chances for a successful neighborhood improvement effort should increase with the number of residents actively involving themselves in a program.

The use of a housing code enforcement program, where it is made clear to owners that all properties in a given area will have to be brought up to certain minimum standards, has been the traditional way of achieving this purpose. Unfortunately many of the housing codes in North Carolina are relatively weak, making it difficult for present CD efforts to make substantial impacts on substandard housing conditions. A 1974 study of Durham's housing code concluded that it "is relatively ineffective in meeting the overall problem of substandard housing" (LBC & W Associates 1974, p. 25).

Currently limited CD mechanisms must be reinforced by a legal instrument with the power to make substantial improvement in deteriorated neighborhoods. Such power can be realistically derived through the resurrection of state urban renewal legislation (N.C. Gen. Stat. 160-500) if utilized in a manner sensitive to citizen and community needs of the 1970's. This power would include the right for the director of the renewal effort to set whatever housing code standard is necessary to improve the quality of housing in the target neighborhood in a meaningful way.

The development of a strong housing code and code enforcement program is an important first step in a rehabilitation effort. It provides the standards by which municipalities can require that housing be maintained at adequate levels of health and safety (Ahlbrandt and Brophy 1975, p. 38). Through urban renewal powers, codes can also mandate that housing units be rehabilitated and not merely forestalled from further deterioration.

Not only must a new code be strong on paper, but it must also be strong in its actual application. Enforcement must be conducted in a quick, comprehensive, and consistent manner. An effective code strategy should also include a citizen education component. It is essential that citizens understand and support the code program as a mechanism to improve their neighborhoods.

As William Grigsby has pointed out, a code enforcement program can only be effective if an environment is created that is conducive to housing maintenance and investment (Ahlbrandt and Brophy 1975, p. 42). This serves to highlight the need for programs that create financial incentives for the rehabilitation of deteriorated housing.

"The major problem . . . is getting the first few people to undertake rehabilitation work."

Rehabilitation Programs

A property is rehabilitated only when the owner decides to rehabilitate it and is able to finance the work (Gressel 1976). A homeowner's or investor-owner's willingness to invest in a rehabilitation effort depends on his perception of whether the investment makes rational economic sense and the confidence that his effort, combined with similar investments, will successfully preserve and upgrade the neighborhood. The realization of an effective neighborhood revitalization effort is most dependent on the provision of low-cost funds for homeowners and investor-owners alike to finance the actual rehabilitation work.

The section 312 federal rehabilitation loan program, which provides a 3% loan to low-income property owners, has been used in many southern cities to finance such housing reinvestment efforts. The national commitment to this program, however, has been inconsistent (American Institute of Planners 1976, p. 15). Funding has been erratic,

preventing cities from maintaining the production schedules essential to volume rehabilitation. Since neighborhood revitalization is dependent on an intense and uninterrupted effort in housing rehabilitation over a period of several years, Durham must seek an alternate source of funding.

The city could establish a viable alternative to the federally mandated rehabilitation loan programs through the cooperation of its Housing Authority, CD office, and local lending institutions. It is only then that a stop could be put to "on-again, off-again" flow of federal dollars.

Such a locally conceived housing reinvestment program might work in the following way. Using local lending institutions as the primary source of rehabilitation loan funds, the Housing Authority would borrow money to implement the program. If the Housing Authority was properly classified as a tax-exempt governmental entity, banks could lend it money at a reduced interest rate (around 50-60% of the normal rate) because the income from the loan would be tax-exempt (Furr 1977). The borrowed money would then be lent to property owners with the interest savings passed on to the borrowers.The obligation of loan recipients would be further reduced by an interest subsidy provided with CD funds. Loans would be tailored to meet the specific rehabilitation needs of the property, as well as the individual needs of the property owner. Credit standards would have to be low enough to allow the majority of CD property owners to participate in the program. Resulting mortgages and a Loan Guarantee Fund supplied from CD money would provide the basic security for the loan.

Four categories of loan recipients would be included in such a rehabilitation program. Homeowners of substandard units would be divided into extremely low- and low-income groups. Similarly, investor-owners would be classified into categories of low- and non-low-income owners. Following is an explanation of how the program would affect each category of loan recipients.

There exists a mixture of standard and poor quality housing.
Photo by Blair Pollock

Figure 2
Deferred Payment Loan Program Supported by CD Funds Versus Private Funds

Assumptions: CD funds are used to make the loan; the amount of the loan is $5,000 with the loan being repaid after 15 years.

$5,000	*amount of the loan*
$0	interest paid by homeowner
$0	amount recaptured under grant program
$5,000	*amount recaptured*

Assumptions: Bank funds are used to make the loan; CD funds are used to pay the interest. The loan is for $5,000 with the loan being repaid after 15 years; the interest rate charged on the loan is 5%, paid annually by the CD Office.

$5,000	amount of the loan
$250	one year's interest on the loan paid by the CD Office
$3,750	amount of interest paid by CD Office over 15 year period
$2,427.50	present value of receiving yearly payments of $250 for 15 years discounted at 6%

Extremely Low-Income Homeowners

Extremely low-income homeowners in Durham have little money to repay even a subsidized low-interest loan, with many being elderly and on fixed incomes. A reinvestment strategy aimed at upgrading the quality of housing must allow extremely low-income homeowners to perform needed repairs, but also insure that they do not incur any undue financial hardship. One way that a reinvestment program can be tailored to meet these needs involves the use of a deferred payment loan.

Employing such a deferred payment loan scheme, loans up to $5,000, to be used only to bring the property up to code standards, would be made available to the homeowner. ($5,000 is a suggested figure based on average rehabilitation costs in Durham in 1975. This figure might understate the current costs of reconstruction, due to increased building costs, and may need to be readjusted.) Recipients would make no monthly payments, but instead would repay the loan in a lump sum or "balloon payment" when they sold, vacated, or transferred the property.

Figure 3
The Use of the Deferred Payment Loan

Assumptions: Values in Figure 3 are approximations and not real estimations of actual cost. They are used to illustrate how the program might work.

Current value of property	$ 8,000
Amount of rehabilitation loan	$ 5,000
Post-rehabilitation Value	$11,000
*assumes that the property value does not increase by the amount of the rehabilitation loan	
Appreciation of rehabilitation property at 3% for 15 years	$ 6,137.63
Value of property 15 years after rehabilitation	$17,137.63
Payback of Loan	-$5,000
Cash Residual after loan repayment	$12,137.63

CD funds would be used directly to make these deferred payment loans, or instead used to leverage larger amounts of private capital which in turn would be made available for such loans. In the latter case, CD funds would be used to subsidize the interest payments due on the loans. Figure 2 explains the cost difference to Durham between using public and private funds in supporting a deferred payment loan program.

As can be seen from Figure 2, using CD funds to leverage private capital could substantially increase a program's size, since private instead of public funds would be used to make the actual loans. However, potential credit difficulties encountered with lending institutions might force the direct use of CD funds for these loans.

The idea behind the deferred payment loan program is for a homeowner to rehabilitate his property and enjoy the benefits of the work without incurring any immediate expense. The rehabilitation loan would be repaid at some future time when the homeowner sold his property. The deferred payment loan program tries to take advantage of appreciating real estate values in the substandard housing sector in Durham. If a successful reinvestment effort occurs in a community, real estate values might be expected to rise initially, although probably not enough to offset the principal of the rehabilitation loan. If properties continue to appreciate in value, the rehabilitation loans should be able to be repaid from the increase in value to the property in a few years' time. Figure 3 details how the deferred payment loan program might improve the position of the low-income homeowner.

As can be seen from Figure 3, it is assumed that the infusion of rehabilitation funds will allow properties to continue to appreciate at their current rate of 3-4% a year. This should have the effect of more than doubling the value of rehabilitated properties in a fifteen year period, and should assuage creditor and homeowner fears of the burden a deferred payment loan might impose.

Elderly homeowners would particularly be able to benefit from a deferred payment loan program. As noted earlier, deferred loans would not have to be repaid until the property is sold or transferred. For many elderly homeowners this means that their loans would probably come due upon the transfer of the properties at the time of their deaths. This would allow elderly homeowners to enjoy the present benefits of the rehabilitation work, and to let their estates bear the costs.

There are several advantages in using a deferred payment loan instead of an outright grant. Most importantly, it helps to insure that the owner does not convert the grant into a cash profit. As pointed out by Gressel (1976), "If the improvements financed with the grant increase the value of the property, and the owner turns around and sells the property, the grant will end up in his pocket." With a deferred payment loan, the amount of the loan is recaptured at the time of sale or transfer. This points to the second advantage of using a deferred payment loan: that the loan, unlike a grant, is eventually repaid and can be used again for other neighborhood improvement efforts. Additionally, loan programs in general seem to arouse less political opposition than programs employing outright grants. With the full support of local government so crucial to the success of a revitalization effort, this becomes an important tactical consideration. Finally, participation in a loan program, by definition, gives a homeowner a substantial stake in the outcome of the rehabilitation effort. This type of strong commitment, so vital to successful reinvestment, might not be generated to the same degree in an outright grant program.

> "Loans would be tailored to meet the specific rehabilitation needs of the property as well as the individual needs of the property owner."

The use of a deferred payment loan scheme does have its disadvantages. Most importantly, loans would probably have a fifteen year maximum term if private funds were used to make the rehabilitation loans. Although our society is increasingly more mobile, it is possible that a situation might arise where contented homeowners would be forced to sell their properties to repay a loan whose term has expired. Even if this group is relatively small, such an eventuality demands that some method of future refinancing be explored to allow satisfied homeowners to maintain home-ownership. The maximum loan term issue, however, may only present a

problem if private funds are used to make rehabilitation loans. It is entirely conceivable for there to be no maximum loan provision at all if CD funds alone are used to make the rehabilitation loans.

The second criticism of the loan scheme concerns the efficacy of rehabilitation loan programs in general. Programs fail as well as succeed. With a poorly conceived deferred payment loan program, property owners might be left with large loans to repay in neighborhoods which have long since gone under. This possibility demands that planners carefully assess market conditions and realities, and cautiously select target communities. In some deteriorated neighborhoods, it might make more sense to do nothing than to cause a large indebtedness among community residents while not substantially changing neighborhood conditions.

Low-Income Homeowners

Other low-income homeowners in the CD area would be eligible for the more traditional low-interest installment type loans made available by local lending institutions through the Housing Authority. CD funds would be used to subsidize interest rates down to 3%. The terms of these loans would vary with structure type and need, with a maximum term of fifteen years. The resulting mortgages would provide the basic security for the loan. Additionally, a Loan Guarantee Fund would be established with CD money to further secure the loans and to guarantee high risk loans made by the lending institutions.

Figure 4
The Costs of Supporting a Deferred Payment Loan

Assumptions - Investor-owners obtains $5,000 rehabilitation loan

Current monthly rent on property	$57.00
Deferred Payment Loan	
Amount needed to be deposited each month to grow to $5,000 in 15 years; assuming 6% monthly compounding	$17.19
Approximate rent increase for month to have enough money at the end of the 15 years to pay back the loan	$18.00
Low-Interest Amortized Loan	
Monthly mortgage payment on 5%, 15 year loan	$39.54
Monthly rent increase needed to support a 5%, 15 yr. loan	$40.00
Market Rate Loan	
Monthly mortgage payment of a 9%, 15 year loan	$86.21
Monthly rent increase needed to support a 9%, 15 yr. loan	$87.00

Abandonment can be discouraged through reinvestment assistance.
Photo by Blair Pollock

Low-Income Investor-Owners

It is an accepted practice for the increased costs of maintaining real estate to be passed on in the form of higher rents. Providing rehabilitation assistance to investor-owners of substandard units would indirectly benefit low- and moderate-income tenants by reducing the rent increases they would face. The use of a deferred payment loan program would be most effective in helping to accomplish this end. Once again, either public or private funds could be used to make loans of up to $5,000 to bring properties up to code standards.

Investor-owners would be allowed to increase their rents under the program. The granting of the loan would, however, be conditioned on the rent increases (due to the rehabilitation loan) being limited to that amount which would grow to the principal of the rehabilitation loan at the end of the loan term, assuming that the additional rent was deposited in an interest-bearing account at 6%. This would give the investor-owner present enjoyment of the rehabilitation work, and provide enough money to repay the loan with the increased rents received over the life of the loan term. More importantly, as Figure 4 shows, the rent increase needed to support a deferred payment loan is significantly less than the rent increase needed to support either a low-interest or market rate amortized loan. This is because the loans made to investor-owners are essentially interest free, with the city subsidizing interest charges.

The idea behind an investor-owner deferred payment loan program is to try to create an attractive rehabilitation program for investors, while keeping rent increases as low as possible for tenants. Since the cost of rehabilitating a property is the measure used to determine subsequent increases in rent, a successful reinvestment program must keep such costs low. The deferred payment loan program works well in accomplishing this by providing interest-free loans to investor-owners and allowing

Figure 5
Comparisons of Deferred Payment Loan and Amortized Loan Programs for Investor-Owners for Term of 15 Years

Rate of Interest	Principal	Monthly Payment Needed to Support Loan	Total Interest Over 15 Yrs.
5% Def.	$8,500.00	$29.23*	$6,375.00
5% Def.	7,000.00	24.07*	5,250.00
5% Def.	5,000.00	17.19*	3,750.00
5% Def.	3,000.00	10.31*	2,250.00
5% Def.	1,000.00	3.43*	750.00
5%	8,500.00	67.21	3,597.80
5%	7,000.00	55.35	2,963.00
5%	5,000.00	39.54	2,117.20
5%	3,000.00	23.72	1,269.60
5%	1,000.00	7.90	422.00
9%	8,500.00	86.21	7,017.80
9%	7,000.00	71.00	5,780.00
9%	5,000.00	50.71	4,127.80
9%	3,000.00	30.43	2,477.40
9%	1,000.00	10.14	825.20

*Monthly payment which would grow to the value of the rehabilitation loan in 15 Years assuming 6% Interest Rate, Sinking fund factor—.003439.

repayment up to fifteen years later. Rent increases are regulated to reflect this inexpensive means of financing rehabilitation work.

The deferred payment loan program also succeeds in encouraging investor-owner participation. As noted earlier, a substantial portion of the substandard stock is owned by elderly landlords on fixed incomes (Salamon 1977). Many of these landlords would be interested in having more liquid assets, as their age and economic circumstances make it hard to keep up with the cost of living. Selling their properties, however, would be somewhat difficult in the unfavorable investor climate. The deferred payment loan program, though, can provide investor-owners with a way of increasing net cash flow. This is because they are given loans which they repay in the future, while being able to increase present rents as soon as the rehabilitation work is complete. This gives investor-owners the option of either enjoying the present benefits of the increased rents or saving that money to repay the loan in fifteen years. As Figure 3 indicates, a successful reinvestment effort can greatly benefit the investor-owner participating in a deferred payment loan program.

Other Investor-Owners

The deferred payment loan program offers substantial benefits for both the tenant and investor-owner. However, because the program does provide such substantial benefits to the investor-owner (a person not often perceived as warranting aid), and because of budgetary constraints, it makes sense initially to limit the scope of a deferred payment loan program to low-income investor-owners.

Other investor-owners would be given financial assistance to rehabilitate their properties, but would not receive as much a subsidy as low-income investor-owners. A low-interest, amortized loan program, where the investor-owner received up to $5,000 to bring property up to code standards, would be one good way to provide such assistance. With the cooperation of the Housing Authority, the CD office, and local lending institutions, loans could be made available to investor-owners at approximately the same interest rate at which the Housing Authority could borrow the funds. This would allow investor-owners to rehabilitate their properties without incurring as large a rehabilitation debt as with a simple-interest market rate loan. For example, the monthly mortgage payment on a $5,000, fifteen year loan drops from $50.71 at a 9% interest rate to $39.54 at a 5% interest rate. Provisions could be incorporated into the program to insure that such savings were passed on to the tenants in the form of lower rents(see Figure 5).

The Section Eight Existing Housing Program

Under almost any rehabilitation loan scheme, investor-owners will be forced to increase rents to offset the financing costs of a rehabilitation loan. However, as noted previously, the rent increase expected under a deferred payment loan scheme should be much less than expected under a more traditional loan program.

Nonetheless, methods to decrease tenant hardships suffered from paying increased rents must be actively sought if a rehabilitation program is to be truly successful. This can be accomplished to a certain degree by tying together the Section 8 Existing Program promulgated under the Housing and Community Development Act of 1974 with neighborhood revitalization programs.

Under the Section 8 program, eligible low-income families can select a standard rental unit and pay between 15% and 25% of their income toward the rent. Although the housing unit must be within the Fair Market levels set for the area, the federal government will subsidize the difference between 25% of the renter's income and the rent on the Section 8 unit (Mendelson and Quinn 1976, p. 221).

Cities like Durham might work out informal arrangements to try to make Section 8 existing housing payments available to tenants living in rehabilitated rental properties to pay for the increase in rent attributable to rehabilitation work.

The major problem with the Section 8 Existing Program is that the need for housing subsidy payments far outstrips the level of federal funding provided (Meacher 1977). Durham and other medium-sized cities in North Carolina might

therefore try to establish priorities for the distribution of Section 8 allotted funds to provide financial assistance to those tenants living in neighborhoods undergoing a rehabilitation effort who will be facing large increases in rent. Additionally, if tenants can be encouraged to stay in rehabilitated units within the neighborhood undergoing a revitalization effort, the Section 8 program might be a further incentive for investor-owners to undertake rehabilitation work, since they will be more assured of having tenants who can pay increased rents.

Critical Maintenance Program

One of the greatest challenges of a successful neighborhood revitalization effort is not in the actual rehabilitation phase itself, but in maintaining an area once it has been rehabilitated. Many homeowners are forced to postpone critical maintenance due to the continuing expense represented by their loans. This strategy addresses the maintenance problem through the use of a critical maintenance project.

The proposed project in Durham, "Project Perseverance," would have two elements, based on a small allocation of CD funds made available to each target neighborhood. One element would be a "tool lending library" at neighborhood CD offices, where residents would be able to check out tools to do household improvements. Secondly, homeowners in need of more complicated repairs would be able to apply to the CD office for a partial critical maintenance grant. A housing advisor in each target area would coordinate a team of workers made up of CETA-funded local residents, neighborhood and other volunteers, and trade-school students to perform critical maintenance functions. Homeowners would pay a percentage of the costs of the repair work (depending on their income levels) in order to encourage only normal wear and tear on the property. This program is important because it would provide an opportunity for neighborhood residents to get involved with, and be paid for improving their communities. Project Perseverance would be made available to homeowners only, as investor-owners can include maintenance costs in the rents they charge.

Conclusion

This article has attempted to develop a housing reinvestment strategy for improving the most deteriorated housing conditions in the city of Durham. Hopefully, its basic principles can be modified and applied to other medium-sized southern cities. This strategy includes strict code enforcement, the provision of a variety of rehabilitation loans to both homeowners and investor-owners with emphasis on the deferred payment loan, the use of Section 8 housing assistance payments, and the implementation of a critical maintenance program. The article attributed great importance to the need for greater reliance to be placed on local resources in addressing housing problems. It is only when the different local actors affecting a community's viability are reacquainted and begin to interact that normal market mechanisms can function and neighborhood conditions stabilize.

Although cities like Durham have major housing problems, market conditions are significantly better than in larger cities. Chances for making significant impacts on substandard housing conditions should therefore be greater in Durham and similarly situated cities. Such cities, however, must sense the immediacy of their housing problems. Intervention is needed while cities are still in an advantageous position to make positive impacts on substandard housing. Unless financial and other incentives are used to improve the quality of substandard housing conditions, and to return them to economical viability, these properties may lapse into even greater deterioration, resulting in adverse community effects.

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Ann L. Silverman

Monitoring Change in Residential Neighborhoods

Neighborhoods which were once stable and thriving, and are today declining, undesirable, or abandoned, can be found in almost any city. In contrast, certain areas which were considered "dead" ten years ago are currently experiencing a revival. Local level planners and policy makers try to understand what makes one neighborhood decline while another thrives. Traditionally, they have conducted "windshield surveys" of housing conditions and examined census data for changes in the demographic characteristics of an area. These techniques serve to describe the changing residential character of the area, but fail to reveal the whole picture or to provide adequate explanations. Additionally, these sources are often relied on "after the fact"; that is, when a neighborhood has already reached a stage where little can be done.

Planners and policy makers seek tools with which to better understand and measure the characteristics of neighborhood change. An improved information base, in the form of a monitoring system for neighborhood change, offers a comprehensive measure of conditions in individual areas as well as a way to compare various sections of the city.

Monitoring involves the systematic collection of comparable data over time. In the case of neighborhood change, a monitoring system would include information on the overall condition or "state" of each neighborhood in the city. The monitoring system would provide an early warning mechanism with which to recognize signs of neighborhood decline and plan interventions before a neighborhood reaches a stage where little can be done.

The system offers accessible data on all neighborhoods with which to make decisions regarding the selection of a site for a particular government program, or the strategy appropriate to a particular area. Evaluations of interventions can be conducted by measuring the state of the neighborhood before, during, and after the program.

The local level planner or policy maker can find the bases for establishing a monitoring system for his or her community in this article. Initially, one must understand the process of neighborhood change and apply it to the local context. The steps involved in designing a monitoring system as well as some examples of approaches to monitoring are described. Finally, a proposal to monitor neighborhood change which graduate students from the Department of City and Regional Planning at the University of North Carolina presented to the city of Wilmington, North Carolina, illustrates how change could be measured in a medium-sized southern city.

Understanding Neighborhood Change

Neighborhoods have been defined variously in terms of geographic boundaries, demographic characteristics, housing conditions, and services provided. The planner interested in neighborhood conservation may think in terms of what makes a person choose a particular house in a particular neighborhood. The location, the people and other houses in the neighborhood, and the services provided as well as ability to pay for housing influence the buyer's decision.

For the purchaser looking for housing with particular characteristics, a house in one of a number of neighborhoods may satisfy his or her demands ("substitutability"). At some point in time, a neighborhood which previously satisfied a person's demand for housing no longer does so. This change may reflect changes in the characteristics of that individual or that neighborhood. One person's decision to move to or from the neighborhood influences the decisions of others: neighborhood residents, investors, and providers of services. The neighborhood change process is a result of this series of actions and reactions.

The "state" of a particular neighborhood reflects the interrelationship among those who make decisions about the neighborhood and the actual conditions in the area. A neighborhood may be thought of as "stable," "declining," or "improving" at any one point in time.

Hughes and Blakely identify certain universal characteristics of a stable neighborhood; that is, one which is considered to provide a good residential environment. A stable neighborhood does not have to be new or of high socioeconomic status, although it frequently meets one or both of these criteria.

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Population stability and particular physical conditions mark such neighborhoods:

> Residents are not burdened by severe economic problems, they have a psychological sense of satisfaction, comfort, and control... the stability of such neighborhoods derives from a condition of "steady state"; even though families are frequently moving in and out of the neighborhood, its social status tends to remain constant... Differing population groups—defined either by race, social or family status—can coexist in a good neighborhood but, again, only in a condition of balance or upward shift. Lower status groups cannot expand rapidly in proportion to the remaining residents... Good neighborhoods tend to be free from invasions of nonresidential land uses, higher density housing types, and new residents of radically different socioeconomic levels... It is only when the gap widens between the socioeconomic characteristics of incoming and outmoving households that neighborhood change is initiated... This change can result in neighborhood improvement or deterioration. (1975, pp. 46-47)

Most discussions of neighborhood change focus on decline. Declining neighborhoods may be characterized by rapid population turnover, and by a population with a declining socioeconomic status and older age. Structures are old and sometimes obsolete. As buildings depreciate in value, confidence in the neighborhood (on the part of residents, investors, financial institutions, and city officials) wanes. If allowed to decline to the furthest possible level, the neighborhood and its buildings will ultimately be abandoned by residents.

The most widely recognized model of neighborhood change grew out of a study of the problem of wide-scale abandonment of buildings and neighborhoods. In this study, *The Dynamics of Neighborhood Change*, Public Affairs Counseling concluded that abandonment was the last stage in a process of neighborhood decline. Employing a life and death analogy, the model (hereafter referred to as *Dynamics*) depicts the neighborhood as possessing a "life cycle" from birth to death. The neighborhood moves from one stage of its life to the next. The speed of neighborhood change is critical. In contrast to an organism, a neighborhood has a power of regeneration.

According to the *Dynamics* model, there are five stages in the neighborhood's life cycle. These stages can be described in terms of the decisions made by households, investors, and public and private institutions as well as the physical, social, economic, and institutional characteristics of the neighborhood:

1. *Healthy Viable Neighborhood*—new neighborhoods where both single family and multifamily construction is occurring and well-maintained older areas—high rates of ownership, limited ethnic or racial change, stable household composition, smoothly functioning real estate market, average family income in excess of citywide average, adequate quality of life;
2. *Incipient Decline*—deferral of maintenance and repair expenditures becomes evident—older stock necessitates higher per unit expenditure, remodeling may be necessary—as neighborhood loses competitive edge, changes occur;
3. *Clearly Declining*—conditions of Stage 2 become more pronounced—maintenance and modernization requirements become more critical as reinvestment in housing stock is deferred over a longer period of time—changes in social structure—real estate market continues to lose vitality;
4. *Accelerated Decline*—disinvestment on the part of public and private sector continues—socioeconomic level of population continues to decline—real estate market basically ceases to exist—old buildings, negative cash flow, high operating costs, minimal reinvestment, pessimistic attitudes;
5. *Abandoned*—the neighborhood has declined to the point where current land uses are no longer economic—few residents, buildings are badly deteriorated, many are abandoned, city services are non-existent or severely inadequate, private sector institutions have withdrawn from the area.

(as synthesized from Public Affairs Counseling 1976, pp. 23-30)

The model is useful in that it sets forth guidelines with which to classify neighborhoods. In fact, the framework, including the five stages, has been adopted by numerous agencies in their attempts to

Decline may be evidenced by structural as well as neighborhood conditions.

Photo by Blair Pollock

monitor neighborhood change and evaluate change-oriented programs in specific localities. The *Dynamics* model does, however, possess certain weaknesses which may limit its applicability. It neglects to consider the neighborhood in its particular historical-political context, and seems to ignore variations in the "birth" of neighborhoods. Some areas may never have been socially cohesive or structurally sound. Others simply outgrew their use. There are differences in the manner in which neighborhoods move (often not in a very systematic way) from one stage to the next.

There is a bias in the neighborhood descriptors towards certain definitions of a good neighborhood (one income, one race, one type of land use). Ethnic or racial change is assumed to be a key sign of impending deterioration (Hughes and Blakely 1975, p. 53).

These assumptions seem out of place in a description of nonmetropolitan southern cities. The drastic social and economic changes which follow racial change in metropolitan cities are often not apparent in nonmetropolitan cities. According to Stegman and Sumka, "the process by which housing is allocated to blacks in these cities has been very different from the frequently observed central-city pattern of racial invasion and succession." In many southern cities, neighborhoods were constructed exclusively for blacks. The demand for new housing by blacks was satisfied only in these neighborhoods. The stability of the nonmetropolitan housing market is not indicative of a lack of problems, but rather of a different type of housing market which requires different types of solutions (1976, pp. 15-16; p. 210).

While the *Dynamics* model may provide local governments with an important first step in understanding neighborhood change, it is important that the user remain aware of its limitations and the need to adapt it to the particular local context.

"Monitoring involves the systematic collection of comparable data over time."

Formulating Indicators of Change

Once the planner or policy maker has an overview of the process of neighborhood change, he or she can begin to apply this understanding to the local situation. It is useful to derive a typology of the city's neighborhoods. Given limited data and knowledge, however, it may be desirable to study other cities' approaches and to modify one of these so that it suits the local context.

Certain key questions should be asked regarding the particular locality. How is a healthy, viable neighborhood defined locally? Who are the different client groups? How do their demands for housing differ? How well does the current housing market serve the demands of these various groups?

The boundaries of neighborhoods should be clearly demarcated. The planner should consider whether census tract designations, a readily available breakdown of the city, are an accurate reflection of the city's neighborhoods as defined by political, geographic, and other considerations, or whether some other unit of measurement should be established.

Broad dimensions or constructs which describe neighborhoods (physical conditions, demographic characteristics, investment climate, and so on) need to be formulated. Within each construct, one can begin to conceptualize what the indicators of change are. For example, how do the physical characteristics of the neighborhood change from stage to stage? In what ways does the demographic composition of the area change over time? What happens, in investment terms, to make a neighborhood decline or improve?

Once a satisfactory list of indicators has been obtained, one can consider what sources of data exist for each indicator. The system designer should not think only in terms of the traditional sources of data, but should consider sources available outside of the city planning department and outside of city government. Examining and considering alternative data measures is one of the most time-consuming tasks in formulating the indicator system. Data measures should be assembled in a consistent format which allows for easy updating.

After the data is assembled, a system of weights or points may be devised by which the assorted pieces of information are combined into meaningful indices. The task of monitoring would fall to persons within the city's long-range planning or evaluation section. The process would, however, involve personnel from various city and county agencies (building inspector's office, registry of deeds, tax office, and others) as well as the cooperation of private organizations (banks, realtors, community organizations).

Approaches to Monitoring

In recent years, several cities have made efforts to monitor neighborhood change. The approaches taken to monitoring vary in accordance with the purposes of the particular system and the sources relied on for data and conceptualization. Efforts undertaken in Pittsburgh, Pennsylvania, and Memphis, Tennessee, are cited here to indicate two possible approaches to monitoring.

The Pittsburgh system originated in an evaluation of the Neighborhood Housing Services(NHS) program begun as a Pittsburgh effort to stem neighborhood decline (Ahlbrandt and Brophy 1975). Now in operation in over twenty U.S. cities, the NHS program aims to facilitate increased private investment and higher levels of maintenance in neighborhoods which do not require extensive public investment to be stabilized.

Ahlbrandt and Brophy see the price paid for housing as a key indicator of change. Given the origins of this monitoring system in a program

concerned with housing finance, this emphasis is not surprising:

> Neighborhood change is observed when the psychology of residents, investors, real estate interests, lending institutions and local government concerning the future of the neighborhood alters. Such change manifests itself through the housing market in the demand for both homeownership and rental property, and it is eventually observed in the transaction prices for property in that location.... Changes in residential real estate transaction prices capture the gross effect of neighborhood change and are therefore used in this analysis as a proxy for shifts in the relative desirability of one neighborhood vis-a-vis alternative locations....However, to refine the gross measure for neighborhood change, additional data are examined. (1975, p. 95)

The elements of change given in the five stages of *Dynamics* provided the basis for the Pittsburgh monitoring system. Variables which describe neighborhood change, as identified by Ahlbrandt and Brophy, and the assumptions associated with these variables, are as follows:

1. Residential real estate transactions prices
   - the effects of neighborhood change are captured in the *price individuals are willing to pay for housing*
   - the *distribution of houses available for sale* has not changed significantly over time
   - *housing market dynamics* are similar among neighborhoods
2. Socio-economic variables
   - *population change* reflects the desirability of a neighborhood relative to alternative locations
   - *race* — increasing percentage of minority population may be synonymous with neighborhood decline; racial change may have an effect on lending practices
   - *age of population* — higher percentages of elderly may be synonymous with neighborhood decline
   - *income* — housing choices are related to income; lower income neighborhoods will offer poorer housing choices
3. Housing variables
   - changes in the *number of units* are responsive to changes in the demand for housing
   - increased *vacancies* are a function of a declining demand for housing
   - *quality of the stock* — percentage of overcrowded units and percent of those lacking plumbing may be used as proxies for the adequacy of the existing housing stock
   - as the *age of stock* increases, the need for maintenance does likewise
   - increasing *homeownership* may be an indication that the neighborhood is improving
   - *rents* reflect quality of the unit, ability of the tenant to pay, and strength of the rental market
4. Variables describing investment in housing
   - *tax delinquency* may reflect disinvestment or an attempt to obtain additional income from a property
   - changes in *building permits* issued may be a proxy for the direction of neighborhood change
   - *mortgage and home improvement loan activity* reflect changes in the involvement of financial institutions in the neighborhood and reinvestment in housing
   - *reasons for investment in housing,* as indicated by recent property buyers, reflect attitudes to the neighborhood
5. Variables describing quality of life
   - *attitudes towards neighborhood conditions,* as indicated by recent property buyers

(1975, Part III: Appendix A)

The Pittsburgh monitoring system makes use of various sources of information from within city government as well as nongovernmental resources. Data for residential real estate transaction prices were drawn from a file on real estate transactions maintained in Pittsburgh's Department of City Planning, and from the Profile of Change prepared for the city of Pittsburgh by R. L. Polk Company.[1] Mortgage lending activity was described in the above mentioned file and in the County Record of Deeds, while data on home improvement loans was obtained from three commercial banks. The latter was only available for outstanding accounts. The city of Pittsburgh's Bureau of Building Inspection provided building permit data. A time series was constructed from property tax records in the City Treasurer's Office to indicate the number of tax delinquent properties. Surveys of NHS loan recipients and of recent property buyers were undertaken to indicate attitudes to neighborhood conditions. The City's Police Department collected major crime data by census tract (Ahlbrandt and Brophy 1975, Part III: Appendix B).

Data for the NHS area was compared with other neighborhoods in Pittsburgh to measure the impact of the program. The report suggests strategies to correspond to neighborhoods according to their stage of decline. For neighborhoods in the incipient and clearly declining stages, a strategy would involve a concentrated code enforcement program

Figure 1
Recommended Treatments According to Minimum Housing Code Enforcement Program

Stage One—annual exterior survey to identify hazards and obvious violations—"windshield survey" of areas not normally encompassed in code enforcement programs
Stage Two—code enforcement for preventive maintenance in older, basically sound neighborhoods where property values are beginning to fall—block-by-block inspection with code violations discussed with property owners—postpone legal enforcement as long as some improvement is made in a six-month period.

Stage Three—areas in clear decline will require a major educational effort in addition to eliciting community support and a strong door-to-door inspection program—code enforcement should be tied to a financial assistance program so that rehabilitation can in fact be accomplished without disrupting the fiscal affairs of the owner—postpone legal enforcement as long as property owners are actively investigating possible sources of financial assistance for rehabilitation.

Stage Four—areas in the last stages of decline represent a severe challenge to the program—Minimum Housing Code Program here must be tied to a program of low-cost, long-period loans or grants—include a program of City Service delivery to maximize the probability of neighborhood preservation—a major educational program is key

Stage Five—use the Minimum Housing Code Program here only in conjunction with Urban Renewal or other major housing effort—it is unlikely, given the City's present resources, that such areas can be effectively rehabilitated (City of Wilmington, N.C. 1976).

to upgrade the housing stock. If private-sector financing is not available, it is recommended that the city provide funds at a subsidized interest rate. A composite of the data gathered according to the above mentioned variables would indicate the state of the neighborhood.

Given a limited allocation of Community Develope Block Grant (CD) funds, Memphis planners wished to determine which areas of the city were most in need of the physical improvements which could be provided using these funds. Memphis' Policy Planning and Analysis Bureau created a "Geographic Priority Area Identification System" to identify areas in substandard condition on a street-by-street basis.

The Memphis group adopted a bias towards measuring physical conditions in accordance with the requirements for CD funds. They formulated four indices: an environmental services index, a structural rating scale, a cross impact analysis, and a socioeconomic index.

For the first index, the conditions of streets, curbs, gutters, sidewalks, vacant lots, and drainage facilities were checked by trained local observers. Streets were scored from zero (perfect) to one hundred (completely blighted) points for each condition. These scores were then aggregated to arrive at overall ratings of good (0-10 points), fair (11-25 points), poor (26-45 points), and substantially deteriorated (46+ points).

The same observers who rated environmental conditions determined the condition of structures in each street segment. Structures were categorized by use (residential, commercial, industrial, institutional, or public facility), and then scored on the following four point scale:

1. good—no observed exterior problems
2. fair—minor problems which could be corrected
3. poor—structure requires major work
4. substantially deteriorated—beyond repair.

After compiling 1. and 2., the analysts constructed a cross impact matrix to show the relationships between the two rating scales, and to display a combined rating in a single numerical value, using the same four point classification system.

The combined rating each street segment received in the cross impact matrix determined the level of community development treatment required to improve its conditions. Each street segment was designated for one of the following treatments: surveillance; maintenance and minor rehabilitation; major rehabilitation and minor redevelopment; major redevelopment.

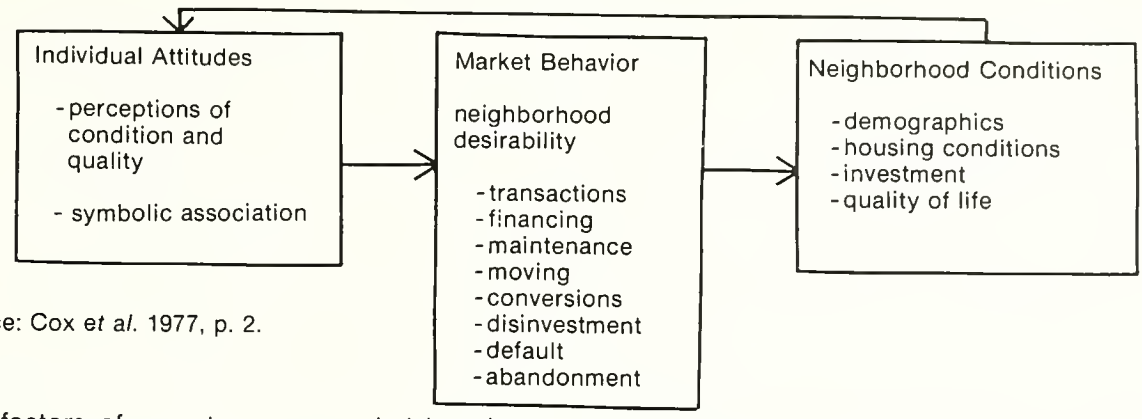
To add a non-physical component to the system, an index of socioeconomic conditions for each census tract was developed from 1970 census data

Housing conditions vary in Wilmington's NHS area.

Photo by Bruce Stiftel

Figure 2

Elements of Neighborhood Change



Source: Cox *et al.* 1977, p. 2.

for the factors of poverty, overcrowded housing, population density, educational attainment, income, and family organization. Using a map overlay of the 1970 census tract boundaries on the street segments, it was possible to combine housing, environmental, and socioeconomic data, and to identify problem areas.

The initial street segment analysis and the grouping into problem areas resulted in the identification of 134 priority areas with an estimated treatment cost of $363.7 million. With only $6 million available, it was necessary to limit further the number of possible treatment areas. Guidelines were generated; first by cost, second by a needs assessment, and finally using three levels of criteria and assigning points at each level:

Level 1...residential character of the area; environmental feasibility; growth pattern,

Level 2...probable threat to existing code enforcement or urban renewal projects; deficiencies in streets, curbs, gutters, housing; city services to the area,

Level 3...completion time (under three years); cost per person (spread benefits to the maximum number of persons); geographic distribution.

Based on this process, nine priority areas were selected to receive the Community Development funds (Yurman 1976).

The Pittsburgh and Memphis examples provide two approaches to monitoring. Other cities are also making progress in this area (see, for example, Office of Local Assistance 1975, and Real Estate Research Corporation 1977).

A Proposal for Wilmington, N.C.

The city of Wilmington, N.C., is actively engaged in programs of neighborhood conservation and revitalization. An NHS program was initiated in one Wilmington neighborhood to improve the investment climate and living conditions in that area. A Minimum Housing Code Enforcement Program matches treatments to neighborhood conditions by recommending enforcement strategies according to the five stages of *Dynamics* (see Figure 1). The City Planning Department recognized Wilmington's neighborhoods as aggregated into seventeen areas of similar size called "assemblies." Efforts are currently underway to improve the information basis for neighborhood change-related decisions in Wilmington. Currently, two systems of data are available. Some sources provide information on Wilmington according to census tracts while others record data by assemblies. The City Planning Department now has access to a computerized Property Tax File. The file includes information on structural conditions, property values, and the year structures were erected, aggregated by assembly. Wilmington's Profile of Change, prepared by R.L. Polk Company, is a source of information by census tract. The Evaluation Office has monitored the effectiveness of city services and programs. A planner in the city's Planning Department has begun work on a typology of neighborhoods and potential measures of change (Farris 1977).

During the spring semester of 1977, a graduate seminar in the Department of City and Regional Planning at the University of North Carolina, Chapel Hill, focused on the NHS program beginning in Wilmington. A group of students from this seminar chose to devise a scheme for evaluating change in the NHS area and a model for measuring neighborhood change citywide. A conceptual model of neighborhood change and a recommended set of indicators and data measures resulted from the group's work (What follows is a brief overview. For the complete proposal including assumptions and detailed descriptions of data sources, see Cox *et al.*, 1977).

A model of the actions and reactions which lead to neighborhood change was designed to describe the relationships among individual attitudes, neighborhood desirability, the behavior of various actors, and neighborhood conditions. The model suggests that change in any one of the four areas will result in change in other aspects of the chain (see Figure 2).

The purpose of the monitoring and evaluation system is to estimate neighborhood conditions and the changes that occur in them. The broad categories used to describe neighborhood conditions, as listed in the model, become the system's constructs of neighborhood change: housing investment, housing characteristics, quality of life, and population characteristics. *Housing investment* reflects the buying and selling of housing and related activities such as loans and maintenance commitments made to the property by the owner. *Housing characteristics* describe the physical condition of the housing and other important elements such as age and owner occupancy. *Quality of life* variables are non-housing elements that indicate how people feel about living in the neighborhood. *Population characteristics* may provide clues to neighborhood desirability as well as abilities to maintain and improve housing.

Each of the four constructs is composed of a number of components or indicators of change. For example, indicators of change in housing investment include: residential real estate transactions, availability and utilization of financing, owner commitment to maintenance and improvement, owner default and disinvestment.

The state of the neighborhood is reflected in the measures which correspond to each indicator. Availability and utilization of financing, for example, is measured in terms of lenders' perceptions, conventional mortgage loans, home improvement loans, and the degree to which nonconventional financing is utilized. The report describes the data sources for each measure as well as the assumptions behind each indicator (see Figure 3 for an overview of the monitoring system).

"A stable neighborhood does not have to be of high socioeconomic status or to be new."

The intention was not so much to compile data as it was to understand where data appropriate to the measures could be found and what form the data was in. One field survey of housing conditions in the NHS area was conducted. Data sources examined fall into three categories: those sources available to and used regularly by the planning department; data which exists in city/county government but not in a form convenient for the monitoring system; data which exists outside of government. In addition, the proposal suggests other possible sources of information which were not examined (see Figure 4).

Assuming that it would not be necessary and the city could not afford to explore all possible sources of data, the proposal concludes with recommendations as to which data sources would bring the city greatest use for the effort, as listed below (Cox *et al.* 1977, pp. 24-25):

Figure 3
Constructs, Indicators, and Measures of Change

Construct	Indicator	Measure
1. Housing Investment	Residential real estate transactions	Lenders'/realtors' attitudes Real estate market transactions
	Availability and utilization of financing	Lenders' perceptions Conventional mortgage loans Home improvement loans Non-conventional financing
	Owner commitment to maintenance and improvement	Owner/renter attitudes Requests for home improvement loans Building permits obtained Code abatements
	Owner default and disinvestment	Tax delinquency Foreclosures Abandonments
2. Housing Characteristics	Physical condition	Structural soundness Age Crowding
	Owner occupancy Vacant and abandoned units	% owner occupied % vacant Number of abandoned units
	Conversions	Building permits Number of multi-units
	Rents	Rent levels
3. Quality of Life	Neighborhood security	Incidence of crime Fires and traffic accidents Resident attitudes Hazardous threats
	Quality of services Attachment to place	Activity/attitudinal indices Activity/attitudinal indices
4. Population Characteristics	Income as a sign of capacity to maintain and improve homes	Neighborhoods with low income households Neighborhoods where income levels are falling Change in housing value to income ratio
	Rate of population change	Rate of turnover
	Trend in size of population	Change in number of households over time
	Population characteristics	Proportion of elderly residents Racial proportions

Source: Cox *et al.* 1977, pp. 3-4

1. Housing Investment

In the area of housing investment, the most important indicators are: residential real estate transactions, availability of financing, and owner commitment to maintenance. In terms of establishing data bases, it is suggested that the following actions be taken:

A) A thorough examination of the County Record of Deeds, with consideration given to the assembly of an ongoing (computer) file of residential real estate transactions in the City Planning Department,
B) A thorough examination of the City tax records, with consideration given to the assembly of an ongoing (computer) file of this information in the City Planning Department (Some of this information has already been assembled in the New Hanover County Real Property Tax File),
C) A thorough examination of the City's record of building permits, with consideration given to the assembly of an ongoing file of this information in the City Planning Department,
D) It would also be valuable to develop more thorough records with regard to lending activity due to the significant role this activity plays in the neighborhood change process. The Mortgage Disclosure Act may facilitate the collection of this data.

2. Housing Conditions

In the area of housing conditions, the most important indicators are: physical condition of housing, vacancies, and owner occupancy rates. The following actions are recommended:

A) If the Planning Department decides to conduct a city-wide survey of the structural soundness of the city's housing stock, it is suggested that the rating technique used in the NHS area Housing Conditions Survey be applied. The Department presently does not have data on structural soundness which rates individual neighborhoods. This information can be used to provide rough estimates of rehabilitation costs for its neighborhood intervention efforts.
B) A measure of vacancies should be developed utilizing a resident survey or neighborhood committees to keep track of vacancies.
C) The best source of owner-occupancy data is the Polk Co. data file.

3. Quality of Life

In the area of quality of life, the most important indicators are: satisfaction with services and feelings of safety. While these quality of life indicators will be of great value in developing a complete system for monitoring and evaluating neighborhood change, they are not as significant as are the other elements discussed, and they will be time consuming and expensive to gather. Therefore, it would be more appropriate to place priorities elsewhere in data collection. Nonetheless, the action for establishing quality of life indicators are included:

A) Satisfaction with services would seem to have the most significance to public officials. Such data could be obtained through extension of the survey methods developed within the 1975 Community Analysis.
B) Crime, fire, and accident data would also be very important in developing a statistical portrait of the changing quality of neighborhood life. This information should be available within the confines of existing departmental files.

4. Income and Population Characteristics

In the area of income and population characteristics, the most important indicators are: changing income and number of households. In terms of establishing measures for these indicators, the following actions are recommended:

A) The Polk Co. data file is the best source for compiling data on both demographic and income changes. While the city should be cautious of the inherent biases in this information, it still represents the most current, complete, and retrievable accumulation of data that is presently available.

Recommended Next Steps

The system outlined in this article can be the foundation of a proposal to monitor neighborhood change in the city of Wilmington, N.C. Assuming that Wilmington, or any other city, is interested in developing the system, it would be necessary to carry out a second phase encompassing the assembly of data in a meaningful form and the

Figure 4

Data Sources By Type

1. Sources presently available to/used by planners .....

The 1975 Community Analysis
The 1965 Neighborhood Analysis
Polk Profiles of Change
1970 Census Data
Property Tax File

2. Sources presently available in government but not in a convenient form .....

County Record of Deeds
Tax Office
Building Inspector's Office
Minimum Housing Code Inspection Office

3. Sources presently available outside of government .....

Data which banks are required to reveal in accordance with the 1975 Home Mortgage Disclosure Act
Informal interviews with lenders, realtors

4. Other possible sources of information .....

Further informal interviews and attitudinal surveys of residents, lenders, realtors
Activity pattern studies
Examination of bank records on home improvement loans
Fire and Highway Department Reports
Police Files
Monitoring done by community organizations or neighborhood groups of: abandonments, turnover in rental housing, fears/threats of nonconforming uses

establishment of a weighting system with which to classify neighborhoods into treatment areas. Before this could be done, however, it would be important to have more local input into the existing categories to insure that they accurately reflect the current Wilmington situation.

In Wilmington's case, it would also be advisable to correct the problem caused by some data being available by census tracts and some by assemblies. If the assemblies are an accurate reflection of Wilmington's neighborhoods, the city may want to petition to have its census tract boundaries redrawn to match the assemblies.

The quantity and sophistication of data gathering will depend on the amount of money which the city decides to allocate towards monitoring. It is recommended that the city begin with those "sources presently available in government but not in a convenient form" (Figure 4).

"How is a healthy, viable neighborhood defined locally?"

The assembly of some of the data could be performed at minimal costs by student interns in the Planning Department or Evaluation Office. Other information could be gathered by the neighborhood monitoring group as recommended above. Workers in the offices which contain the data (such as the County Record of Deeds) could be induced to keep their records in a format which would allow for computer access to that information needed for monitoring. Once the data is arranged in a convenient format, updating will not be a difficult task. Students involved in the Wilmington study group have already explored some of the data sources and have established formats by which this data could be assembled (Cox *et al.* 1977, Appendices).

Once the data measures have been collected, it will be necessary to put them into a meaningful form. A set of indices, such as those established in Memphis, would be appropriate in Wilmington. The indices might follow the constructs with a housing investment index, a housing characteristics index, a quality of life index, and a population characteristics index.

A point system which matched conditions to treatment categories would have to be devised for each index. The Memphis four point scale (as described earlier in this report) might be modified to be used for the housing characteristics index. Others would have to be more explicitly spelled out according with the city's goals and recommended strategies in each of the four areas.

Each neighborhood would receive a score on each index and a total score. These scores would in turn be matched to treatment categories (for example, a score of 0-30 might signify a stable neighborhood in need of no treatment, while a score from 31-60 might denote a neighborhood which requires surveillance and some treatment to keep it from declining). The treatment chosen would depend on which indices were weighted particularly heavily in the neighborhood's overall score. Priority areas would be designated by grouping neighborhoods according to the level of treatment required to make them into stable areas.

The proposed monitoring system cannot replace subjective judgment, observation, and politics, all of which play roles in decision-making. It can, however, improve the city's data capabilities and provide a valuable input into the process of dealing with neighborhood change. The proposal developed for Wilmington as well as the recommendations and examples cited herein offer the basis for a strategy of monitoring neighborhood change which could be applied in numerous communities.

Note

1. The R. L. Polk Company has been in the business of gathering local data on an annual basis for many years. This data was generally used by banks, retail firms, and other businesses for market and economic forecasting. Recently, the company developed a program (Profiles of Change) to package its data in a form useful to local planning agencies. This program provides an annual source of data by census tract for many U.S. cities and towns.

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Towards an Updated Approach to Neighborhood Planning

Since the publication of the earliest conceptions of the neighborhood by Clarence Perry in the 1920's and the subsequent formalization of neighborhood planning standards and criteria in the manual *Planning The Neighborhood* (Hygiene of Housing Committee 1960), there have been far-reaching changes of both a social and technical nature which suggest the need for a new look at this approach to neighborhood planning. The purpose of this article is to reexamine the neighborhood unit concept in light of this advancing knowledge and evaluate how applicable those original assumptions underlying the neighborhood are for the contemporary planner developing a process to plan our residential environments.

This review begins with a brief synopsis of the earliest physical planning model for neighborhoods. Following this, recent research concerning the relationships between social, mental, and physical outlooks upon, and uses of the neighborhood will be introduced to uncover a broadened array of concerns which should be considered when planning residential environments. These ideas are then applied in an illustrative planning process which concludes the paper.

Historical Background

While the physical model employed in practice is largely based on *Planning the Neighborhood* which brought the goals, principles, and standards used in residential area planning together in a unified form, the earlier source from which much has been drawn is the work of Clarence Perry (1929; 1939). Perry introduced the neighborhood unit concept which set down principles to guide the development of residential areas in a unified manner. Housing was to be considered in relation to open spaces, community facilities, local shops, and traffic flows so that resident needs would be efficiently served. By defining an area of local attachment to be inhabited by a homogeneous population with shared values and interests, social concerns associated with physical plans could also be addressed.

It was not until the publication of *Planning the Neighborhood* that most of Perry's principles were translated into formalized standards, although that document disclaims any intention of prescribing the social dimensions of the neighborhood, especially regarding matters of racial and income segregation. Instead it follows closely the accepted public objectives of its day, such as health, safety, convenience, and economic efficiency. Today it is important to consider additional matters such as social equity, environmental quality, and resource conservation as part of a multiple-objectives planning framework (Kaiser *et al.* 1974, pp. 107-208; Hufschmidt 1971). There must also be a sensitivity to designing the neighborhood to correspond to resident needs, values, and life styles, and to include citizen participation in the process. Such issues were not central to the earlier neighborhood planning approaches, and their rising importance signals the need to develop a process which is better suited to our current planning context. We proceed now to recent research which sheds light on the neighborhood.

Social, Mental and Physical Orientations to the Neighborhood

According to Suzanne Keller, author of *The Urban Neighborhood,* "The sociological conception of neighborhood emphasizes the notion of shared activities, experiences and values, common loyalties and perspectives, and human networks that give an area a sense of continuity and perspective over time" (1968, p. 91). Using this definition, it is possible to organize recent work on the social dimensions of

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This article is an abridged version of a research report prepared jointly with F. Stuart Chapin Jr., Alumni Distinguished Professor of City and Regional Planning, University of North Carolina, Chapel Hill. The author wishes to thank Professor Chapin for his inspiration and continual suggestions. The unabridged report is available from the Department of City and Regional Planning. See Richman Alan, and F. Stuart Chapin, Jr. 1977. "A Review of the Social and Physical Concepts of the Neighborhood as a Basis for Planning Residential Environments." **Occasional Paper Series,** *No. 50. $5.00.*

neighborhood. It is useful to note first that while Perry's neighborhood unit concept denotes a clear-cut spatial entity, recent thought suggest that there are multiple levels of residential space, including the immediate microenvironment, the proximate or local environment, and the larger conceptual environment,[1] each of which plays a significant role in the activity time budget[2] of family and individual life.

Activity Patterns as a Dimension of Neighborhood

The first aspect of Keller's characterization of a neighborhood, "shared activities and experiences," involves both a temporal and a spatial dimension which interact with each other. Activity patterns may refer to time periods of residency, daily and weekly routines, or cyclical event scales, as well as to the spatial locus of patterned movement in terms of "experienced space" as defined by the actual physical spread of daily activities by residents and "perceived space" based on the cognitive awareness of potential locations not yet experienced.

The "experienced space" perspective, employed by Chapin (1974) focuses on a "mean locus" of activity range determined via a summing of the crow-flying distances from a person's home to every out-of-home activity visited during a 24 hour period. In data from the Washington, D.C. area, a very extensive commutershed is shown for many out-of-home activities. While the main job is the dominant out-of-home activity, it was also found that eating, drinking out, and shopping portray an extensive pattern, and one that is dispersed as compared to the more centralized employment plot. Additionally, socializing and recreation, while showing a considerably less extensive activity space, still conform to a larger radius than that of the traditional neighborhood unit. This would seem to indicate that the heightened mobility exhibited by an automobile-oriented society calls for a lessened emphasis on the provision within walking distance of opportunities to satisfy daily social, economic and cultural needs. However, if future gas prices continue to climb or fossil fuels become more strictly controlled, the form of these relationships may be tempered.

> ". . . there have been far-reaching changes of both a social and technical nature which suggest the need for a new look at . . . neighborhood planning."

On the other hand, studies of moving behavior provide a bridge to the broader "perceived space" perspective. By probing the different ways in which the environment enters into the consciousness of the individual while making the periodical "big decision" of residential choice, these studies provide more solid footing for concepts such as user needs, residential satisfactions, and lifestyle preferences and aspirations as they are reflected in daily activity patterns and expressed resident values (Brown and Moore 1971; Michelson 1977).

The neighborhood planning efforts which have equated the physical and social aspects of the neighborhood and have attempted to achieve social objectives through physical design may have been misguided. Cognitive and experiential perspectives of space may need to be examined more closely in future planning practice.

Shared Values and Loyalties as Dimensions of the Neighborhood

The second aspect of Keller's definition involves notions of shared values and loyalties, and leads to consideration of whether physical layout principles are an appropriate basis for planning resident behavior patterns and social interaction. Solow *et al.* comment that "While there is some evidence that the physical layout can be conducive or resistant to functional and social interactions, it is increasingly recognized that factors such as the characteristics of residents, degree of mobility, social values, norms, attitudes and other determinants influence social behavior considerably more than the physical environment itself" (1969, p. 38).

When Perry framed his planning principles, he consciously sought to influence the behavior of residents through the physical environment. There is growing evidence suggesting that the values he was hoping to achieve are no longer central planning concerns and no longer match the values held by residents of existing communities. His stress upon the village lifestyle and the nuclear family as the cornerstones of neighborhood life may be inappropriate in our pluralistic, highly mobile, metropolitan society. His top-down, expert-oriented planning does not leave room for the assessment of the perceptions, values, and preferences of residents, nor does it allow for their participation in the process. Finally, the provincial character of the local concerns over school busing and property protection which may emerge from neighborhood unit planning run counter to the metropolitan-wide stake in high quality education and equal housing opportunities for all.

Human Networks as a Dimension of Neighborhood

The third aspect of Keller's definition, human networks, hinges upon the relationship of proximity and homogeneity to neighboring. Each community may define the role of the neighbor in a unique manner. For one it may mean sharing food and giving aid in emergencies such as times of sickness; for another it may mean casual conversations in each others' houses; while for a third it may only entail salutory greetings or visual recognition on the doorstep or along pedestrian pathways. In any case,

it is evident that if the planner is to understand and plan for social well-being in neighborhoods, he must identify the social processes going on within them in relation to physical siting factors and population variables.

Both Kuper (1953) and Festinger, Schacter, and Back (1950) found a strong connection between spatial proximity and the orientation of places of residence to one another (position on the block, relationship of doors and windows to other units, paths and common spaces) and the formation of friendships. Establishing such acquaintances may be conditional, however, upon the existence of a similarity of values (such as ideas on childrearing) and stage in the life cycle among residents (Gans 1968; Michelson 1970). This may imply that a new style of residential planning may be necessary which provides for sufficient homogeneity at the level of the block to allow for consensus rather than conflict among neighbors while enhancing opportunities for friendship formation based on common needs, backgrounds, and obligations. At the community level, a more balanced, heterogeneous population would be desirable and equitable.

The use of local shops and the attachment by residents to local friends and organizations is bound up within the conception of the neighborhood as a residence-serving physical delivery unit. The extent to which local services are used and various forms of social exchange occur indicates the importance that such facilities and services have for neighborhood design. Alternately, technological, economic, and social changes affect the locus of people's activities and may alter the individual's sense of neighborhood.

The Extent of Localization of Facilities Within the Neighborhood

The importance of services and facilities to residents can be established from considerations of nonuse as from factors associated with their use. Gold (1972) has found that, in an era of increasing leisure time opportunities,neighborhood parks are seldom used by more than 10% of the service area population. Relative to the frequency of visits and time spent in nonurban recreation areas, there is a decrease in the use of public parks in urban areas. Nonuse suggests to Gold that unless a participatory approach to parks planning is formulated, incorporating concepts of multiple use, flexibility, and design for a variety of people, citizens will become unwilling to support parks with taxes.

Foley (1952), in his study of a residential district in Rochester, New York, did not address the question of nonuse. Instead he tried to assess the degree to which residents are either *neighbors* who use local facilities, engage in formal neighboring, and recognize their district as a unified community; or *urbanites* who are attached to individuals, organizations and institutions stretching beyond the neighborhood to the larger city.

Residents with similar values and activity patterns gather in public spaces.

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He discovered that the typical Rochester resident was part urbanite and part neighbor, exhibiting neighborly characteristics in proportion to the size of the nucleus of local facilities available to him. Individuals along this local-urban continuum can be distinguished on the basis of socioeconomic characteristics such as stage in the life cycle, occupation, and ethnicity, as well as by such information as length of residence in the community and degree of mobility.

Recently, Albert Hunter, working in the same Rochester neighborhood tried "to test the dynamic causal proposition of the ecological, social, and cultural-symbolic 'loss of community' which this neighborhood has experienced over the 25 years since the Foley study" (1975, p.540). Hunter suggests that "emergent and perhaps persistent counter forces do exist for the creation and maintenance of local community solidarity. The prevalence of 'ideological communities' around major institutions located in older areas of central cities, such as medical complexes and universities, though relatively unique within a metropolitan area, may be sufficiently general nationwide to provide a limited but persistent set of counter values to the 'loss of community' in urban settings" (1975, p. 550).

Recent Trends Emphasizing a More Extensive Area of Interaction

According to Hoover (1968, p.237), the most basic aspect of urban spatial organization is the interdependence among activities. Mills (1972, p.12), finds that urban areas exist because people have found it advantageous (in terms of political centralization, military protection, goods and information exchange, and religious/cultural domination) to have a spatial concentration of activities. As modern society has evolved, certain patterns of urban activity have changed to meet the shifting scale of the

functional city. Specialization and diversification of institutions, assembly line production, high speed transportation, and computerized communications have brought about a new metropolitan order which supercedes the face-to-face, personalized interaction which once took place in the neighborhoods of the city (Mumford 1961).

Probably the most timely example is the change in household shopping patterns: the shift in buying habits away from the cluster of small, local-serving stores toward the institutionalized shopping center with its broader range of services, drawing upon a more extensive residential territory made possible by the car. The change in the retail distribution system has had significant impacts upon neighborhood planning, as evidenced by the difficulties in Columbia, Maryland, a new town which has incorporated a modified version of the neighborhood unit scheme illustrated in Figures 1 and 2. Originally the developers had hoped to find sponsors for a "Ma and Pa" type of local grocery store for each neighborhood, but this proposal proved financially infeasible and was dropped in favor of a chain store operation. These too have been financial failures, due to the small scale (1000 households) and low density of the neighborhoods, and the continued use of village supermarkets by residents (Slidell 1972).

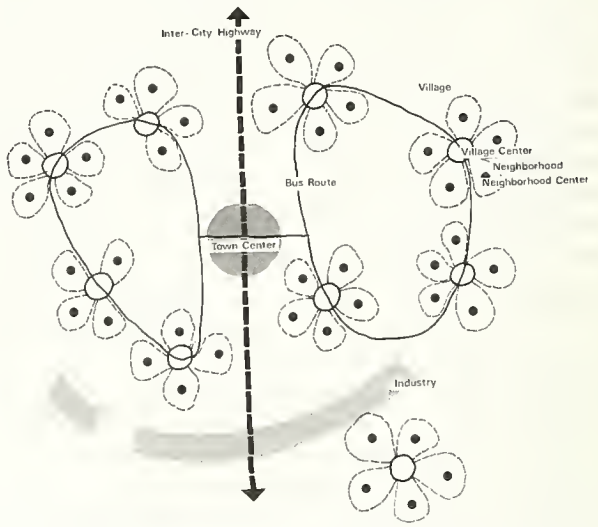
The failure of the local store has undermined achievement of the social organization concept which the founders of Columbia were seeking when they planned these neighborhoods. It was hoped that by providing a proprietor who would be concerned with the functioning of the community, the local store could become a service and communications center, acting as a central point for local social interaction. This is a role that appears unsupportable in the planned community, primarily because of the stores' inability to maintain economic solvency, but also due to the continuing attachments of residents to other nonlocal and metropolitan-wide pursuits.[3]

Dewey (1957) and Issacs (1948), recognizing the increasingly specialized nature of individuals' activity choices, were among the first to question the self-sufficiency of the neighborhood unit. Considering today's "throw-away" societal consciousness, as represented by shifting fads in the use of leisure time, there are difficult problems in designing capital-intensive facilities that accomodate changing public whims in their use. Since we can expect continual changes in the makeup of our population, and since there are different needs and uses of space by various age and ethnic groups, facilities that were attractive to one population may go unused by another. This suggests two alternatives:

1. Assume high mobility of households and build communities with this expectation, designing neighborhood facilities for couples, for childrearing families or for senior citizens, and planning on households moving with each change in the life cycle, or

Figure 1

Columbia New Town Concept



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2. Assume low mobility of households and build communities with this expectation, designing neighborhoods with facilities that can be adapted to changes in life cycle. Neighborhood facilities might be accomodated in shell-like structures which are continually updated to correspond with changing needs in the resident population, thereby encouraging them to remain immobile.

Trends catalogued by Webber (1963;1964) and Meier (1962) indicate some limitations to this line of reasoning. Advances in telecommunications and transportation have made physical proximity less important for the maintenance of close relations, creating communities characterized by business and professional ties kept over great distances with few correspondingly intense local associations. Even as these factors are making the spatial locale less important in everyday affairs, there are countervailing forces that tend to recreate opportunities for human interactions, as with growth of the office function in center city.

Webber views this country as being increasingly molded by an urban communications network, leaving no portion of the nation untouched by developments elsewhere and standardizing the behavior and values of rural and urban residents of all ethnic backgrounds. The result is an emerging system of order and organization which is far different from traditional notions of the typical urban neighborhood setting.

Seemingly then, while metropolitanism and regionalism and the rising importance of issues of social equity and environmental quality indicate trends toward a widened perspective, counteracting considerations of individual and group identity, political decentralization and local citizen participation are evidence that attributes of size, impersonalization and powerlessness that go with the

nonplace phenomona are unacceptable to urban residents. This points to the potential for conflicting purposes which will be encountered in residential planning

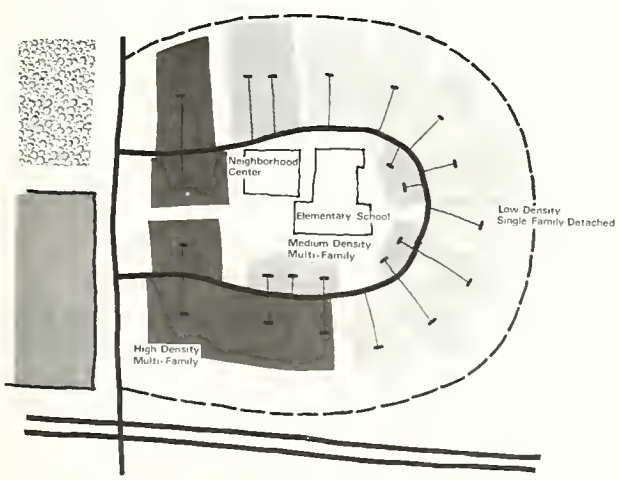
The Congruence of Social, Mental and Physical Concepts of Space

Michelson has developed a typology for examining the interfaces between the three measures of local socio-spatial congruence: experiential, neighboring and mental factors (1970, pp. 193-217). Translating these to match the previous review, we have examined *activity* patterns of *experienced* space, *social* interaction in *neighboring* space, and *cognitive* perspectives of *mental* space. Each of these dimensions may have value in assessing the salience that residential environments have for accomodating or precluding social, cultural, and psychological patterns of residents.

On the one hand, there is an overall match among these perspectives in that aspects of each may provide insights into long neglected realms of the neighborhood, and may help to define a new scale of analysis for residential planning. On the other hand, a mismatch may exist in that planning with these notions in mind may result in the development of homogeneous, exclusionary communities. If these are to be avoided, then planning must consciously seek to reflect diversity and pluralism rather than trying to mask the conflict where it exists. The residential environment should allow for the expression of individualized life styles capable of blending together into an identifiable community image. Planning must also reflect traditional concerns for cost efficiency in service delivery, and public health, safety, and convenience. This set of planning objectives is addressed in the planning process outlined below.

Figure 2

Columbia New Town Neighborhood Concept



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An Illustrative Planning Process For Residential Environments

This section attempts to define the scope of an "updated approach to residential planning." At the heart of such an undertaking lies one fundamental principle: since residential areas serve vital social as well as shelter functions, it is essential that this reformulated approach not only consider basic housing and community facility requirements conceived within engineering and design standards, but also social dimensions such as activity patterns, spatial imagery, and environmental preferences.

For our purposes, "residential environment" will be defined as "the land, facilities, services and social structure which supplement the home in providing for satisfaction of individual and family needs, social interaction, personal development and political participation and which delimit the territory appropriately included in the design of residential development" (Solow *et al.* 1969, p.47).

Such a definition gives latitude for bringing into the planning process recognition of the variable locus of activities associated with the basic residential functions of households of differing characteristics. Household members function within, and have attachments to the proximate, adjoining and accessible environments in the city, each serving a range of purposes and providing for various forms of personal and organizational interactions. Their perceptions of, and satisfactions with the home environment at the scale of the dwelling unit are affected not only by characteristics of that residence, but are also influenced by and are influences upon neighborhood and metropolitan perceptions and satisfactions (Campbell 1974, p.258).

The Functions of Residential Environments

To assure that planning for residential areas is fully responsive to value-laden and behavioral considerations brought out in the previous sections, the shelter and social functions of residential environments are best defined around what have become widely attributed to be human and social needs. While Maslow's hierarchical continuum, ranging from physiological to self-actualizing needs (1970, pp.35-46), and Warren's listing of social needs (1963, pp.9-11) provide helpful insights, it is necessary to express needs in terms which are meaningful for planning. As such, the environment can be seen as the context in which satisfaction of needs is either hindered or facilitated. Needs themselves are the building blocks which work in varying environmental settings to account for different forms of behavior. They are the primary units of analysis in planning for residential environments (Perin 1970, pp.121-136).

Marans' categorization of needs is illustrative of one form which relates directly to the residential environment. It ranges from physical needs for exercising, releasing tension, and finding private

and natural settings to social needs for security, affiliation, recognition, and status (1975, p.9).

Building from such a foundation, need-based planning functions may be defined as they emerge from the congruent socio-spatial relationships established earlier. One illustrative set of functions that could be used as guides to planning the neighborhood would include shelter, security, childrearing, symbolic identification, social interaction and participation, and leisure.

The *shelter* function encompasses physical elements used by household members in the localized vicinity, such as playgrounds, religious centers, convenience shops, elementary schools, streets, and utilities. The dwelling unit itself is deemphasized as a planning element since its features are not part of the land use planning realm, while employment, higher education, and most shopping activities are more regional in nature.

The *security* function may be expressed as the role which the environment plays as a safe, stable, and ordered setting for daily activities. This can be reflected in physical safety from traffic, natural hazards, and criminal violence or in mental well-being resulting from harmonious land use relationships and visually restful surroundings. Security is also affected by a confluence of factors: the scale of design, the homogeneity of the populace, the clustered nature of buildings and their relation to walkways, streets, open spaces, entrances, and lighting,which help in establishing real and symbolic barriers of influence and opportunities for surveillance.

The residential environment is the place where most *childrearing* occurs, since it is where most of the child's needs are satisfied and where the family, school, peer groups, and neighbors transmit their values and norms to the child. Since parents desire consistency between their values and those which the child encounters in his or her local acquaintances, they may place importance on insuring a similarity of values and interests in their choice of friends and community.

> "There must also be sensitivity to designing the neighborhood to correspond to resident needs, values, and life styles . . ."

Symbolic identification with, and attachment to a particular locale, is most consonant with a high level of participation in local organizations, finding age-related peer groups, a long residence in the community and a constant use of local facilities (Hunter 1974; Suttles 1968). The symbolic function may be an integrative mechanism, manifested in common awareness of territorial boundaries and name associated with that residential environment, or it may extend to a cultural identification with the popularized image of the community. Symbolic identification may also express exclusionary sentiments which must be openly and persuasively dealt with by the planner.

Social interaction arises out of the need for companionship, social recognition, status, and belonging. Suitable layouts for pluralistic populations may be best achieved through designs which encourage occupation of small spaces (a block) by groups with shared values, a similar stage in the life cycle and socioeconomic status. Overall amalgamation of these individual enclaves is obtained at a more inclusive spatial level through integrated usage of common facilities (such as secondary schools, parks, and community centers) and common identification with the community image or territorial base.

> "Each community may define the role of the neighbor in a unique manner."

Participation may also involve individual commitment and collective political action aimed at community improvement and control. The increased number of neighborhood-level organized units which have proliferated over the past decade, including community development corporations, multiservice centers, and little city halls hint at a new role and range of planning activities at this scale. While the time for Kotler's (1969) and Hallman's (1974) form of neighborhood government may not yet have come, the American Law Institute has developed a process for the participation of neighborhood organizations in administrative and judical hearings concerned with the local land development ordinance and regulations (1975, pp.86-89).

It can be anticipated that the *leisure* function of residental environments will become increasingly important as the work week shortens and energy shortages mount, placing greater emphasis on local rather than regional facilities. Developers of planned residential environments now commonly include recreational facilities close to residences, recognizing the basic need for exercise and the status-conferring nature of these investments. In some cases the provision of such facilities has been shown to ensure their frequent usage and maintenance, while heightening the desirability and overall amenity of the environment (Burby and Weiss 1976).

Planning Objectives and Evaluation Criteria for Residential Environments

A set of objectives which tie directly back to the residential functions identified earlier are used here to illustrate the range and kinds of objectives to be considered in the course of the collaborative process. Figure 3 shows the relationships between these objectives and the evaluation criteria.

Evaluation criteria should be formulated concurrently with the development of planning guidelines which specify the principles to be followed and

standards to be achieved in design alternatives to insure consistency among these specifications. However, since the guidelines for residential planning are still in need of research, it is not yet possible to rigorously define a set of evaluation criteria.[4] Instead, five illustrative kinds of criteria are introduced.

Range of Life Style Choices indicates to what degree the proposed living environment allows individuals and households an opportunity to pursue their own identity and living style. Plans would be assessed as to their sensitivity to behavioral objectives such as the variety of opportunities available to residents for use of their free time in familistic, self-actualizing, and other pursuits. For physical objectives, plan assessment would consider the mix of housing costs and densities, the range of leisure-time opportunities, and the variety of environmental amenities associated with each alternative.

Public Convenience would consider how different physical arrangements would offer residents a savings in travel time in the course of going about their daily round of activities, be this via foot, bicycle, automobile, or mass transit. There is a relationship between time savings and the range of life style choices offered, for if residents can be spared travel time in activity pursuit, and if the environment offers residents a variety of opportunities to enjoy the free time they have gained, then the two criteria operate in unison (Chapin 1971; Meier 1959).

Cost-Efficiency examines the public provision of education, recreation, and social services, and the viability of private sector supply of shopping, medical care, and other services. A benefit-cost analysis, employing a cost-effectiveness criterion, could be utilized to rank alternatives as to their impacts (Lichfield 1975; Hill 1973).

Environmental Vulnerability-Since the objectives above are centrally concerned with the use of space for certain shelter and social functions, environmental concerns are cast primarily in the role of constraints. Three evaluation measures would seem to be necessary: one involving impacts on the functioning of ecosystems, one considering the degree of environmental pollution, and a third assessing the effects on aesthetic and historical qualities. The

Figure 3

Functions Serves by Residential Environments, Planning and Development Objectives, and Illustrative Criteria for Evaluating Progress Toward Achievements of These Objectives

FUNCTIONS	OBJECTIVES	ILLUSTRATIVE KINDS OF EVALUATION CRITERIA				
		Range of Life Style Choices	Public Convenience	Cost-Efficiency in Service Delivery	Environmental Vulnerability	Social Interaction Opportunities
Shelter	Provide a cost-efficient layout. Provide a range of housing unit types and densities of varying costs with associated amenities. Provide access to daily activity centers.	*	*	*	*	
Security	Minimize the impacts of vehicular and natural hazards upon residents. Enhance opportunities for personal development and well being, order and stability in the environs.				*	*
Childrearing	Provide a safe, healthy, imageable and stable environment with the appropriate facilities for familistic pursuits.	*				*
Leisure	Protect the quality of the natural and built environments for recreational use. Provide access to both open spaces and community facilities.	*	*	*	*	
Social Interaction and Participation	Preserve the social community. Provide opportunities for socializing, social control, social organization, and mutual support.	*	*			*
Symbolic Identification	Establish or maintain a comprehensible, cohesive, and focused community identity which may promote the laying of territorial claims by residents.	*			*	*

exact nature of the relationships involved here is still to be determined, but evaluation systems are now being developed for such a purpose (Leopold 1971).

Social Interaction Opportunities-A final criterion would consider the social interaction opportunities afforded by the spatial organization of the residential environment. Burkhardt's method for determining the degree to which a neighborhood functions as a socially interactive unit, based upon behavioral patterns of neighboring, use of local facilities, participation in neighbhorhood organizations, and attitudinal dimensions expressing commitment to the locality may have value here (1971, pp. 85-94). His identification of residential mobility, degree of land use mixing, and residential density as surrogate measures for a "neighborhood social interaction index" is suggestive that easily obtainable data may be used to operationalize such an evaluative criteria.

> ". . . there are difficult problems in designing capital-intensive facilities that accomodate changing public whims in their uses."

The application of such criteria to the evaulation of alternative plans might proceed in the manner outlined by Hill in his goals-achievement matrix method (1968).

Models of Planning and Development

This final section of this article is one interpretation of the direction in which management agencies should proceed if a participatory approach to planning residential environments is to be implemented. As an illustration, three models or strategies for direct community involvement are described which give latitude for administrative innovation in terms of staffing, operations, budgeting, and forms of public pressure for action employed. Each of the three models assumes public funding of community planning and development organizations set up on a continuing basis, along with basic informational, coordinative, and technical assistance provided by central municipal agencies, allowing each locality to formulate its own operating style based on resident priorities for action.

The *central services model* is one in which designated community organizations receive technical assistance from city hall or the county courthouse on a task force basis. Functioning primarily as a diagnostic team, it would be composed of physical and service delivery planners financed by and provided through one or more central agencies. Such teams would move from one community to another from year to year, probably being most effective in middle- and upper-income communities where value positions are more readily comprehended by professionals. For lower-income and ethnic communities, no matter how much care is taken to identify problems or how much emphasis is given to using value-free techniques of investigation, there is a strong likelihood that some concerns and needs in the communities will be overlooked or misunderstood. This risk can be minimized by bringing local paraprofessionals onto the team.

Much of the recent experience with community development block grants reflects some version of the task force approach, with multidisciplinary teams focusing their attention on small target areas (Yurman 1976).

In Atlanta, where planning is done at both the city-wide and the neighborhood levels, twenty-four neighborhood planning units have been created, each with a task force comprised of planners, interns and volunteers that does the comprehensive planning with the help of citizen groups (Department of Budget and Planning 1976). The staff efforts involve outreach in the form of citizen identification of problems and potential solutions, as well as the coordination of on-line budget priorities within each department with the expressed desires of citizen groups. This exchange process is modified by the orientation which the staff must have toward city-wide and system-wide needs and problems in addition to neighborhood projects. It would appear that where a task force model, employed in cities with Atlanta's kind of planning orientation, is combined with one or the other of the two models discussed below, it would function smoothly, since there is likely to be a high degree of congruence between city-wide and local community objectives.[5]

> ". . . neighborhood parks are seldom used by more than 10% of the service area population."

The second model is the *semi-autonomous model,* based on the concept of an individual assigned to a community from a central agency, acting as a provacateur (Davidoff 1965). Under this model, the activities pursued by the advocate would be dictated by community priorities as established within a collaborative participation process. The resources for planning and service delivery would again come from the budgets of city hall or county courthouse agencies. The advocate's tactic would be to represent the community inside the city government in its attempt to gain support and needed facilities.

In San Diego, California, the neighborhood planning program revolves around the premise that the residents should prepare a plan for city adoption, rather than the other way around (Neighborhood Decentralization 1976). The city of Boulder, Colorado, has gone so far as to prepare a workbook to guide neighborhood groups in the preparation of their plans (Department of Community Development 1976). If their plan is adopted, then not only will the neighborhood gain the power to review and have input on proposed land use changes in the area, but

the group can also develop yearly work programs to submit to their neighborhood planner who will act as the community advocate, seeking funds for their proposals.

The third approach is a *self-directed model,* where the community would employ its own planner. This individual would operate on the community's behalf, working to obtain for it a share in municipal improvements and services, while also seeking private and federal sources of funding for local programs. Community development corporations are typically private, nonprofit organizations with their own programs, funds, and staff. They are governed by a board selected by neighborhood residents and may sponsor business enterprises, housing rehabilitation, and public service referral systems.

Another option would be to have self-directed organizations receive annual programming under a community development type of funding, competing directly with other governmental units for federal monies under a mini-block grant program. This could be modeled after the Neighborhood Housing Services (NHS) program, administered by the Urban Reinvestment Task Force for HUD and the Federal Home Loan Bank Board (FHLBB). Local NHS corporations are typically composed of residents of targeted neighborhoods, representatives of financial institutions, and local government officials. Funds are generated largely from a federal grant and a local contribution (by lenders or the city) and are used to administer a revolving loan fund and cover operating expenses (Ahlbrandt and Brophy 1976).

In evaluating the relative prospects for applying each of these models in any particular city, it would be useful to consider:

1. which one will best allow for achievement of stated objectives
2. which one is most politically, economically, and socially feasible
3. which one is strongest in a participatory sense

Children enjoy a well-designed neighborhood play space.

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Conclusion

The findings from the social sciences reviewed here do not reinforce traditional definitions of neighborhoods as identifiable socio-spatial units. Instead, they suggest that the planning emphasis might be better be placed on the functions these areas serve for their residents, whatever spatial form they may take. From a shelter viewpoint this would mean an emphasis on facilities and services rather than on bounded service delivery areas. From a social perspective, the empahsis would be on the design of space to fit the social order of communities—the security, leisure time, social interaction, and participation functions important to residents. Such a focus would need to be guided by an overriding concern for insuring the provision of equitable housing, education, and employment opportunities for all members of the society while maintaining environmental integrity.

Notes

1. These three terms describe the varying scales of space in which people perform activities on a day-to-day basis. For further explanation see Hall (1969); Sommer (1969); Hester (1975); Barker (1968) and Appleyard (1970).
2. An activity time budget measures the way in which a household or an individual allocates time on a periodic basis (hour-by-hour, daily, weekly).
3. A related piece of evidence to document this claim is the fact that only 20% of the residents use the recreation facilities in Columbia, indicating the relatively minor potential these have as local-serving residential facilities (Slidell 1972).
4. Innovative systems which could be consulted in reference to guidelines and standards are Bucks County Planning Commission (1973) and Sanibel Planning Commission (1975).
5. In this regard, the New York City experiment with decentralization through the Office of Neighborhood Government represents a blending of the central services and semi-autonomous models of organization. See Fainstein (1976).

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Computers and Planning in Small Cities

Although many large planning agencies have utilized sophisticated computer-based analyses such as econometric forecasting and air pollution dispersion modeling for many years, numerous smaller agencies view computers as not feasible or even desirable for their operations. Computers can be very useful to small scale planning efforts, however. This article explores possible computer applications for modest planning settings. It examines the practical benefits small and medium size agencies can derive from computers, and responds to misconceptions that have kept these agencies from using computers in the past. Geocoding, an easily established computer application with many potential uses in the local planning setting is discussed and illustrated through the experience of the Durham, North Carolina City Planning Department.

Scope of Computer-Assisted Planning Activities

The local planning staff can improve its ability to produce relevant data, analysis, and policy recommendations in a timely manner by using a computer. While it will not be blithely suggested that providing good information will produce good decisions, one certainly cannot expect the best decisions to be made with any kind of regularity without the presence of high quality, well-directed information. In the absence of such information, these decisions must still be reached whether they be based on personal knowledge, intuition, or guesswork. By enhancing the information produced, the planner will not necessarily alter his position in the decision-making framework. Nevertheless, a certain advantage can be maintained by the individual whose information has won the reputation for reliability and who possibly is able to assume a stance in which would-be adversaries find themselves relying upon him or her as an information source.

The logical first use of a computer is to enhance those tasks that local planners currently perform. A computer can replicate many manual tasks, accomplishing them so rapidly that their more frequent use is encouraged. With relatively simple data retrieval, and restructuring and matching techniques, the planner can produce valuable information which might otherwise not be available. Time-consuming calculations can be accomplished almost instantaneously, freeing the planner's staff for other pursuits. Sophisticated analyses which may thrive on such computational capabilities can be performed. Late in the analysis, the planner would still possess the flexibility to reaccomplish calculations if, for instance, a slight error in specification were discovered of if an additional policy variable should be introduced. Analyses that are reserved for major projects because of time and staff requirements may become feasible for smaller projects because of the proposed system. The most dramatic impact may be the potential capability to design alternative plans iteratively, perform sensitivity analyses, and then redesign the plans as necessary, all in a relatively short period of time.

As auspicious as this extension of the planner's analytical capabilities may be, it still does not mean the computer can, in and of itself, solve problems or suggest policy solutions. Speed and efficiency in processing data are most beneficial when problems are clear-cut. But the computer can also be used to distill information in order to comprehend the problem. Ideally, a process should be envisioned in which problem formulation and problem solving techniques are integrated with political considerations, value dimensions, and other non-technical participation.

Having placed the technical component in a process which includes personal, professional, and political elements, the remainder of this article will focus more directly on developing such technical capacity. Included are strategies for implementation, equipment and programming concerns, and suggestions for data organization and the nature of applications.

Preconceptions, Obstacles, and Strategies

Questions concerning the capabilities, costs, and philosophy of computer use are inevitable. Five common obstacles are: questions about size of system required, costs, manpower, and apprehension about past failures and unknown technologies.

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Unwieldy Information Systems

The first among these questions may be about the size of computer system required. A common misconception is that computer applications for planning activities require a large, unwieldy information system. Closer scrutiny shows this is not necessarily the case. With the availability of inexpensive but powerful minicomputers, a geographic base file such as the one created by the Census Bureau and a modest level of technical expertise, the local planning office can develop a much simpler, less expensive, user-oriented system. One can view this arrangement as a departure from the large general administrative-type information system to a planning oriented and controlled, land-related information system. It is feasible for the system to be virtually self-contained, to be processed on equipment located in the planning office, and to be operated and controlled by the planning staff rather than by data processing (DP) personnel.

The seemingly inevitable communications gap between the planner and the DP specialist is thus eliminated, as this "planner as programmer" approach focuses more clearly on policy issues than on programming form. There is minimization of the intermediary between the users and the data, and maximization of the users' specialized knowledge in the problem solving process. Thus persons who best understand and relate to the overall planning objectives are placed in the position of developing the types of output that are needed and that will be the most effective. As further applications are conceived and undertaken, new data requirements and possible improvements to the information base can be continuously reevaluated. Chrisman noted that often too much emphasis has been put on data banks and too little on the software needed to use them: "The relationship should be symbiotic; new software should allow refinement of information structure" (1976, p. 197).

Past Failures

A second view that must be dealt with is that past computer application attempts, especially large modeling efforts, have been failures in terms of the long lead time, delays in implementation, and the resulting paucity of usable products. Indeed, it may be a common pitfall to tout the system very highly in the beginning in order to gain acceptance. As a result, during the time lag for implementation, people become quite impatient for results. This situation may be compounded if certain projects ultimately require more effort than had been anticipated, or if unforeseen problems arise. A strategy for meeting this criticism is to prepare relatively simple applications that get off the ground quickly and that will be identified closely with a particular policy problem in need of solution. In this way, demonstrable results are made evident within acceptable time frames utilizing available resources. Similarly, at every stage of the development process, intermediate products should be produced and fail-safe fallback positions maintained.

This strategy involves a practical three-stage approach to system development. In the first stage of implementation, basic planning and analysis techniques that are currently used on a regular basis and that will have future utility are to programmed. Examples may be planimeter calculations, population projections, and census data access, summary, and display. As system developers refine their skills and expand their expertise, more complicated second-stage applications can be developed, possibly including subarea analysis, routing and network studies, overlays, and methods for monitoring urban indicators. The emergence of such products will form the basic foundation from which the developers can attempt considerably more complex third-stage applications, which might include the generation and testing of alternative plans, ambitious urban modeling attempts, and comprehensive impact measurement.

Computer applications should be developed with a careful balance between sophistication and pragmatism. Alonso (1968, p. 253) suggests that where complications might tend to lead to negative results, the strategy of netting out simple, complementary applications should be followed. Rather than "using wood to create skyscrapers," he writes, "we had better build low to the ground while we improve upon our materials." Thus, as important as it is to consider what characteristics should be incorporated within the system, the discipline to be able to limit the number of applications under development is necessary. The marginal cost of an additional application or data file may on surface appear small, but with each additional complicating factor, the system approaches the situation in which it seems to assume a life of its own, exceeding the essentially supportive role for which it was created. If the urge toward over-accumulation and uncritical storage of data or the tendency to embark on development of new applications before prior ones have been completed is not checked, none of the elements may be completely satisfactory. A distended, unorganized system will likely not profit anyone, and obviously, simple expansion of the system cannot be equated with improvement.

Apprehension About Computer Products

Another response when computers are proposed may be apprehension about or outright resistance to the use of computer products. Who has not at some time been overwhelmed by the jargon and paraphernalia of computers? When such sentiments are prevalent, then someone has failed in the crucial task of communicating in easily understandable forms the substance of the work involved. Equally important is communication to potential users of the conceptual and operational nature of these mechanical advances. There are primarily two audiences to approach in this effort: 1) executives whose subsequent backing may depend on the provision of appropriate decision outputs with

which they can justify the investment, and 2) planning staff members who will have occasion to use the machine daily if so inclined.

The first audience is too often ignored once the persuasion and acquisition stages are past, but the extra effort expended to respond to problems within the sphere of influence of these decision makers can pay dividends in terms of solidifying continued support. What is the purpose of the system other than to be accepted and used by decision-makers? In cases where such attention has been given, there has been considerable support and involvement by chief executives (Dutton, Kraemer and Pearson 1976, p. 456).

The key to approaching the second group is to involve them at every chance with work related to the system, and in so doing demonstrate benefits which they can expect to derive. First, computerize important and time-consuming routine tasks, such as planimeter calculations or aggregation of census data. Further, concern for the utility and handiness of the analytic tools provided to the user should be equal to concern for the technical accuracy of the final products. If the system lives up to its proponents' time-saving claims by facilitating analysis tasks (even encouraging further investigations otherwise too toilsome or time-consuming), then it will likely serve to augment the planners' effectiveness. But if the design of a program makes it so difficult to run (charts, tables, manuals, and constant attention required of the user) that it serves to exacerbate operational complexity, then it may simply deter use of the machine at all. A primary goal of system developers must be to provide adequate richness of detail in its outputs which can be presented in a clear and useful manner, while reducing the complications faced by the user.

The planning staff members who serve as system developers can speed acceptance of the computer and its products by constantly reasserting the primacy of planning considerations over programming problems. Certainly, time must be set aside for the development of some of the more complex methodological tools apart from day-to-day staff requirements. But the development process should not in any way be isolated from important planning activity. Rather, it is better that it draw upon these pursuits for input and direction. The system should not be intended to have a revolutionary impact on the planning activities, but initiate evolutionary improvements in the planning products which are delivered.

High Costs

A fourth possible preconception about a computerized system is that of high costs. It seems agencies which have developed geocoding applications have generally had large budgets, maintained sizable staffs, and have been located in large cities (Kraemer and Modeleski 1975). It may have been true previously that only the largest cities and metropolitan planning agencies could successfully launch their own systems; however, the development of geographic base files by the Census Bureau and the occurrence of minicomputer revolution have dramatically altered the situation. Decreasing prices of small machines and their continually increasing computing capacities present an alternative to the centralization of data systems, making local data processing on a stand alone machine an economical option.

In the debate over fiscal constraints, the question may arise whether the planning office should buy its own minicomputer (the mini) or use the city's central computer facility. If the central computer is nearing capacity use, or if the city data processing staff is already being fully utilized, then there are strong arguments for the purchase of the small machine. It can be shown that the expense of purchasing time on a large regional machine would quickly outstrip the cost of the mini. It may also be a persuasive argument that planning oriented research-type applications will no longer interfere with or be delayed by important city administrative data processing requirements. The disadvantages of total reliance on the central general purpose data processing staff for the programming of planning application were previously outlined; on the other hand, the DP staff might be equally glad to relieve their operation of bothersome planning requests. Finally, equipment costs may be reasonable compared with time purchase on a large machine.

If proponents are successful in their argument that expenditures are not excessive, it still might be a pitfall to sell the system to top management on the basis of economy. It has long been a part of the "litany to electronic data processing" (Danziger 1976) that the computer will save money in terms of reduced staff and other operating expenses. This rationale may appear attractive to proponents who are otherwise having a hard time selling the system to superiors based on the intangible benefits of improved information. Those attracted to this argument should keep in mind, however, that at least one study failed to document any significant monetary savings (Dutton, Kraemer and Pearson, 1976). Justifications based on reasonable cost estimates and performance potential are more advisable.

Skills and Training

A fifth apprehension about computers may be that extensive expertise is required before any computer application is possible. Certainly, some special skills are necessary, but they are well within the grasp of most local planning agencies. Possibly the largest knowledge gap involves making wise decisions in the purchase of hardware; a broad array of small machines and vendors creates a somewhat volatile market. Technical assistance from the city's data processing chief or management information coordinator should be used during the acquisition process. Relatively common programming skills on the part of planning staff members, such as

knowledge of FORTRAN or BASIC programming languages will suffice for the development of most applications. An understanding of large file handling methods, including search and sort techniques, is essential and can be obtained in second-level programming courses. No separate system operating personnel are needed, although some familiarity with assembler programming is useful (for instance in writing handlers for peripheral equipment). Such assistance can be requested from the vendor or contracted on an hourly basis, possibly with advanced computer science students from a nearby university. Unquestionably, more sophisticated programming skills will be needed for the most complex applications; but with the proposed implementation strategy, such skills can be developed over time. In the meantime, important and useful applications will have been developed.

Geoprocessing

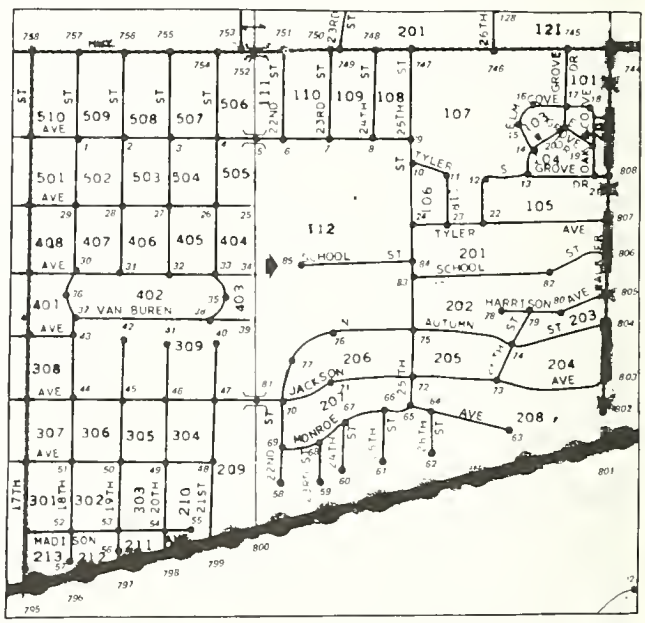
City planners are interested in the geographic location of and spatial relationships among urban pheonomena. The three basic information units of particular interest to planners—the person, the structure, and the parcel of land—can be pinpointed to unique locations. The nucleus about which all data files should be organized is preservation of the geographic component.

There are two methods of storing urban information which preserves its spatial character. The grid cell approach records the primary or dominant land use and natural resource characteristics for equal size cells which blanket the city. Retrieval of data is convenient, aggregation of data is facilitated, and overlaying of data can be accomplished with relative ease. Developed more recently, the segment/polygon encoding process assigns node numbers at each street intersection and along map features, records X and Y coordinates for each node, defines a segment between each pair of nodes, and stores land use, natural resource, and other characteristics that exist on the left and right sides of each segment. Polygonal areas, each displaying one particular data type, can be defined by chaining together individual segments. Advantages of this coding approach are that area, shape, and position of tracts can be determined more precisely than with the grid cell approach; there is considerably greater potential for precise computer mapping, and importantly, specificity is retained in the data, thus enabling detailed retrieval of information for small area investigations. Drawbacks are involved in the problems of software development for the coding, storage, retrieval, and particularly overlaying of data.

The grid cell approach to data handling usually cannot provide the fine detail in information that is required by the full range of local planning activities. Therefore, local planning agencies may have to create a segment/polygon type data base to gain the desired detail and accuracy. Fortunately, since 1969, the U.S. Census Bureau has made a major investment in the development of a standardized geographic base file. Full commitment by the Census Bureau has resulted in the creation of a DIME (Dual Independent Map Encoded) file for each Standard Metropolitan Statistical Area (SMSA) in the nation. The file is essentially a computerized version of the SMSA's Metropolitan Map Series (MMS) and contains the nodes, coordinates, and segments noted above. The system is used by the Bureau for its decennial census and was designed to "provide an efficient method for geographically ordering physical, social, and economic data for use in operational, management, and research programs which deal with local problems" (Silver 1976, p. 130).

The DIME file can serve as the nucleus base file about which other data sources available to the local planning agency can be clustered. Recorded on the MMS maps and stored in each record of the file are block numbers and census track numbers, which are the keys to access of all census data. Also stored with each record is the street address range for the particular segment. So with the DIME file available, any data within the city containing addresses, such as tax/parcel files, public service delivery records, school registration data, etc., can be address matched and thus expressed spatially. Use of the DIME file is attractive to local agencies because it is well documented, extremely flexible in its use, accompanied by working software (although presently geared towards large machines), and will receive the continued technical and financial support of the Census Bureau.

The uses to which a geographic base file can be put are as numerous as the potential sources of



The DIME file provides an efficient method for geographically ordering physical, social, and economic data.

addressed data existing in the local area. It may be constructive simply to list some of the applications local agencies have reported.[1] The file has been used to:

- — determine the distribution of low-income housing and welfare recipients during the process of deciding social service facility location;
- — plot new housing starts and changes in commercial/retail location;
- — determine where school-age children live in relation to the schools they attend in order to alter school assignments;
- — evaluate the changes that have occurred in the geographic pattern of crime incidents;
- — measure commuter flows based on home address and employment location, and devise carpooling schemes;
- — enumerate the number of jobs within a target area, and determine the number of households and population within a specified radius of a recreation site;
- — freely aggregate and disaggregate socioeconomic data even for target areas that cover parts of several census tracts;
- — define subarea boundaries and calculate distances, areas, and densities;
- — map unpaved streets, and list streets without sidewalks within a specified distance of an elementary school; and
- — compute the number of miles of streets patrolled by public safety officers in each police district.

As can be seen from the variety of applications, there is considerable flexibility inherent in this geographic base file which allows its uses to be directly related to local needs and priorities. Most of these applications can be accomplished without investment in additional data collection, since they rely on existing data resources, such as the DIME file, census data, state plane coordinate systems, tax/parcel data files, and other local data sources. What is presently missing is computer-adapted natural resource and environmental data. The major products of the U.S. Geological Survey (USGS) and the Soil Conservation Service (SCS) have been maps and text. The data from LANDSAT satellite imagery is not of sufficiently fine detail to be tied to a specific site or parcel. In response to this situation, it has been suggested that these natural resource agencies concentrate on geocoding of data related to small areas for policy planning and implementation needs (Landini and Paul, 1976; Smith and Dial, 1976). That is, USGS and SCS mapped data should be presented as well in DIME file type format. Until such suggestions may be implemented, it is left for local agencies to code, or digitize, their own natural resource data. The digitizing of detailed maps is a time-consuming process; therefore it may only be feasible for the local agency to digitize and store all classes of information for a few important target areas for which detailed investigations are in order. The natural systems data should be indexed by coordinates so the continual changing of the street network, which will be reflected in updates to the DIME file, will not render the natural resource files obsolete.

Automated geoprocessing by local agencies is still in its incipient stages; however, the trend toward acceptance appears unmistakable. In 1975, there were 55 agencies actively using geoprocessing across the country. Significantly, 101 additional agencies indicated that they too planned to have operational applications in the next two to five years (Kraemer and Modeleski, 1975, p. 16). Some users are now pressing for the development of sophisticated, user-oriented spatial analysis packages similar to commonly available statistical packages such as SPSS. The present statistical packages are "typically aspatial by nature." Methods to process geographic variables, such as position, direction, neighborliness, connectivity, etc., are needed in order for the full potential of geographic base files to be realized (Muehricke 1976).

The Durham Experience

In 1975, the Durham, North Carolina, Planning Division purchased a minicomputer system. This local agency's experience serves as an example of the installation and incorporation of such a machine into planning activities.

The dialogue which spawned the idea of computer application in Durham began in 1973 when the Planning Division undertook the development of a Land Use Evaluation System (LUES). LUES was conceived as a process by which land development proposals, rezoning requests, site plans, etc., could be comprehensively evaluated with respect to their economic, environmental, and fiscal impacts. At that time, automation of the LUES process was not even considered; rather LUES was simply viewed as a way to make the various planning activities that were being performed in response to development requests more systematic. As staff members worked, however, to devise the procedures for executing the numerous impact "tests" on each proposal, they began to recognize areas of analysis which a computer could aid.

Since the analytic tasks were all couched in spatial contexts, staff members began investigating the concept of geocoding. Having little prior knowledge of the subject, they surveyed the literature, attended a DIME workshop sponsored by the Census Bureau, and began to follow the activities of the Urban and Regional Information System Association. They soon concluded that the DIME file provided a convenient base which defined the city infrastructure as well as offering promise in the area of socioeconomic data analysis. Thus, they took the initiative in refining and maintaining the DIME file for

the Durham area, and the Census Bureau followed with a small grant to support an update of the file.

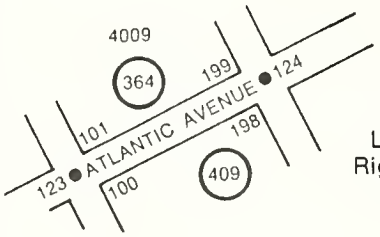
During this time, the staff also became intrigued by the idea of assigning coordinates to urban features as a way to facilitate certain spatial analysis tasks they wished to perform, such as calculating the percentage of land on a site that is undevelopable due to soil type or proximity to flood plain. In fact, it was probably this idea that most directly led to the purchase of a minicomputer, since other DIME file applications, such as address matching, had already been developed by the Census Bureau for large machines and could be run at Durham's central facility. But when the staff was unable to locate similarly available programs for spatial analysis, they decided to develop their own algorithm for defining the intersection of overlapping polygons (which is the geoprocessing equivalent of overlaying mapped data). Working through the summer of 1974, two interns and a member of the city data processing staff produced a successful, if laborious, method of calculating the area of the polygon of intersection.

With this experience, the staff now understood that they could retrieve natural resource data spatially, given the coordinates of a particular site and the existence of digitized natural resource files. Thus, they began to perceive the value that an electronic digitizer would have for their planning activities. With such a machine, it would be possible to quickly transform mapped data into X and Y coordinates. By the spring of 1975, they were busy studying the literature of several digitizer vendors.

The more that was learned about the digitizing of points, the more it became apparent that it was equally important to have a way to directly store, edit, and otherwise process the numerical data representing the points. It was at this stage that one vendor suggested the purchase of a minicomputer along with the digitizer. The staff very nearly dismissed this idea out of hand (see Section III on preconceptions), but simply out of curiosity investigated the possibility. Surprisingly, prices were quoted in the range of $10,000 to $25,000 for virtually complete systems. The staff began to recognize the potential a minicomputer held for the future of LUES; the computer would initially be used to support digitizer applications but could also eventually be used for sophisticated modeling and plotting applications. After further investigation, it was learned that more powerful configurations which would provide FORTRAN capability as well as upward mobility for future hardware acquisition were not significantly more expensive ($25,000 to $40,000 range). Financed over a five year period, the annual costs were acceptable to city administrators. The decision to purchase the computer-assisted digitizer system was sanctioned by the City Council.

In the summer of 1975, the bid specifications were written. The city's management information system coordinator, who had previously displayed a strong interest in the proposed system, provided invaluable

FOR EACH STREET SEGMENT A DIME RECORD CONTAINS:



From Node	123
To Node	124
Street Name	Atlantic
Street Type	Avenue
Left Addresses	101-199
Right Addresses	100-198
Left Block	364
Left Tract	4009
Right Block	409
Right Tract	4009

A section of a DIME file's Metropolitan Map Sheet (MMS) showing node dots and numbers, and 3-digit census tract block number.

assistance during this period. He and the staff sought bid examples from other cities which had bought minicomputers, and they also attended a minicomputer workshop. Bids were opened in September 1975, and Digital Equipment Corporation (DEC) was awarded the contract. The system that was purchased includes a Science Accessories Corporation GRAF-PEN digitizer and DEC's PDP-11/10 computer, LA-36 teletype, VT-50 CRT display, TS-03 magnetic tape drive, and two RK-05 disk drives. For budgetary reasons, but also to avoid purchasing equipment which could not be effectively utilized for some time, the staff deferred the decision on acquisition of additional hardware such as a plotter, graphic CRT, and line printer until a future date.

Although the equipment was delivered in December 1975, it was not until March 1976, that applications programming could actually begin in earnest. In the interim period, technical assistance had to be sought from other programmers in the Durham community to produce such systems programs as a handler for the digitizer, a handler to make the CRT the primary control device, alteration of the keyboard handler to make it operate more like a line printer, and, most importantly, a general purpose magtape read program which would allow the transfer of data from the city's Burroughs computer to the PDP-11.

In April 1976, programming of planning applications was finally in full swing. The staff at this time consisted of two planning interns with programming skills and one professional planner who gave approximately 25% of his time to system development. The initial applications attempted included a planimeter package for the the computation of distance and areas, a generalized sort program, a method to translate the digitizer points into state plane coordinates, and routines to search the DIME file segments for target area analyses. These attempts proved successful, and, by early

summer, a sufficient number of products were available to demonstrate to the entire planning staff the potential of the computerized system. Subsequently, some planning staff members began proposing applications which could assist them with their own planning activities, and two planners themselves enrolled in night school programming courses.

The Durham Planning Division has been programming its computer for just over one year now. In that time, the staff had revised both the planimeter and DIME file search packages, begun development of methods for digitizing, storing, and retrieving land use and natural resource data, written numerous programs for the update, maintenance, and manipulation of the DIME file, and installed a vendor-supplied statistical analysis package. Most recently the staff has refined the file structure of the third count (block) and fifth count (block groups) census data to produce on-line, direct access availability of this data for staff use. Further refinements to the DIME file search package will soon be undertaken so that when street segment information is retrieved, the accompanying census data will also be immediately displayed. When these applications are perfected, planning staff members will possess the capability to answer speedily spatially-related socio-economic questions such as what is the median income of the households within a certain radius of a proposed commercial site; where are the greatest concentrations of elderly residents located in the city; what is the population density of a particular target area; and so on.

At the present time, Durham does not have an automated LUES. In fact, it will be several years before a system will be available which is capable of assisting planners in all aspects of comprehensive development impact analysis. But the Durham Planning Division does have intact a powerful, moderately priced minicomputer and digitizer system, which is producing quite useful planning products after one year's service. There is no shortage of potential applications which are conceptually no more difficult than the ones already accomplished. Finding staff time to undertake them is the only limiting factor. One by one, these applications will form a foundation of computer-assisted planning-oriented tools which enhance the activities of this local planning agency.

Summary

This study has presented the case for development of computer applications by local planning agencies. In doing so, it has suggested file structure, identified potential uses, foreseen obstacles, and proposed strategies for implementation and acceptance. It is laced with optimism about the prodigious uses to which the system can be put, but acknowledges difficulties to be encountered and gaps in the state of the art. It does not assert that the inherent consequence of producing information is to influence policy decisions and actions, but it does describe ways in which the system can enhance the existing base of planning procedures.

Note

1. Examples are compiled from the proceedings of the conference of the Urban and Regional Information Systems Association.

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The Distinction Between Economic Development and Economic Growth: Implications for North Carolina Development Policy

Two widely recognized economic theories attempt to explain the process of development in an interregional context. Trade theory (and traditional neoclassical growth theory in general) posits that economic growth is both the necessary and sufficient condition for development of a less developed region. The theory of unequal exchange, on the other hand, contends that while economic growth is necessary to the development of a region, it is not a sufficient condition to bring about true development, defined as increases in the overall welfare of the region's population.

This article attempts to break down the determinants of wages into an economic growth component and an economic development component as suggested by these theories. It then shows the importance of the economic development component in explaining cross-state wage differentials.[1] The state of North Carolina has attempted to further its development through growth-related policies. The analysis found herein suggests the need for a reassessment of North Carolina's existing development policies.

Development Models: Trade Theory and Unequal Exchange

In the trade theory model, one region is assumed to be a well-developed, capital-intensive area, and the other a less-developed, labor-intensive region. The capital-intensive region can produce commodities which require a large amount of capital inputs at a relative cost advantage; the labor-intensive region can produce commodities which require a large amount of labor at a relatively low cost.

This comparative advantage will inevitably result in trade between the two regions. In the long run, production specialization will occur as the regions begin to increase trade relations and concentrate their commodity production in the area of their advantage in factor endowments. The equalization of prices for consumer goods and production inputs will also result as a direct effect of this interregional trade. This phenomenon will allow residents of the less-developed, labor-intensive region to increase their satisfaction and welfare by raising the real wage levels in the region and, in so doing, increase consumption. This increased demand for consumer goods will benefit the economy of the less-developed region, and convergence between regions will inevitably result in the long run (Kreinin 1971; Lefeber 1966; Olson 1971).

The other interregional development model, based on the theory of unequal exchange, posits that the natural play of market forces tends to increase rather than decrease inherent regional inequalities. As interregional trade occurs, all economic activities which in the less-developed region bring a larger than average return will cluster in certain localities, leaving other areas of the region in a relatively disadvantaged position (Myrdal 1952). The lower two-thirds of the population in the less developed region get progressively poorer at the expense of the upper third, who derive their income from the professional, managerial, and corporate sectors of the economy. The implicit development strategy associated with this theory of continuing interregional divergence is that government of the less developed region must assume an active role in impeding the steadily increasing forms of inequality by devising an economic system that will achieve economic growth in the region while at the same time increasing equality in the distribution of the factors of production (Friedmann and Sullivan 1975)

Using these conflicting theories, a distinction can be made between the concepts of economic growth and economic development. This distinction is critical in understanding why balanced, broadly-based development has not occured in all areas of the United States. It also helps us to understand the implications of North Carolina's development policy.

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North Carolina Development Policy

The state of North Carolina can be viewed as a less-developed (that is, labor-intensive and low-wage) region in the interregional context which we have established. As part of the southeastern region of the United States, North Carolina is relatively less developed than the northern U.S. The state's industry is dominated by textile, furniture, and tobacco manufacturing, all of which are labor-intensive systems of production. North Carolina ranks forty-fifth of the forty-eight contiguous states in average weekly earnings (Crow 1975).

North Carolina's development policy is composed of two major elements. First, efforts are being directed towards encouraging a better industrial mix in the state through recruitment of high-wage industries. Second, North Carolina workers are being encouraged to become more productive through the provision of skill training and efforts to raise the general education level in the state.

The North Carolina Department of Natural Resources and Community Development operates four programs intended to upgrade the industrial mix in North Carolina. Food Industries Development Units promote commercial fishing, agriculture, and other food industries by providing information regarding potential locations, recruiting industries and investors, and by providing technical assistance. The Tourist Promotion Unit offers tourist information and promotes advertising campaigns which highlight the state's cultural, historic, and recreational attractions. The Industrial Development Unit conducts promotional activities to encourage firms to locate or expand their operations in North Carolina. This organization provides site location information and other assistance such as local labor market data, building costs and regulations, and available fiscal and financial inducements to potential clients. The International Development Unit provides the same information to encourage foreign investment, and conducts promotions to encourage the export of commodities produced in North Carolina (Reid 1977).

"Economic growth is viewed by proponents of neoclassical economics as the necessary and sufficient condition for the development of a less developed region."

Second, the Apprenticeship Division of the Department of Labor conducts apprenticeship certification programs in North Carolina. These programs are voluntary training agreements reached between an employer and a worker where on-the-job training is provided at a graduated pay scale to the worker, who agrees to work and learn a particular skill or trade. State certification of these arrangements protects the rights of both parties to the agreement and helps to insure the quality of the apprenticeship programs (Reid 1977).

Textile mills predominate in North Carolina manufacturing.

Photo courtesy of *Southern Exposure*

Third, the North Carolina Community College system places a high priority in upgrading the labor forces and improving employment opportunities in the state. The system's job-oriented programs include vocational and technical degree programs, occupational extension, and occupational training for the disadvantaged and handicapped. The prime sponsors subcontract to provide classroom training, job orientation and motivation classes, and special education (Reid 1977).

The Concepts of Economic Growth and Economic Development

Economic growth refers to the quantitative changes in the spatial and economic structure of a state which result in increased factor utilization and commodity production. It is concerned with increased production in a region regardless of the distributive implication of this growth. The processes of industrialization and urbanization typically characterize successful economic growth. Economic growth is viewed by proponents of neoclassical economics as the necessary and sufficient condition for the development of a less-developed region. As a region uses its comparative advantage to produce labor-intensive commodities and engages in trade with a more developed region, residents' satisfaction and welfare will increase and convergence in the level of development of the two regions will result in the long run.

Economic development refers to the more qualitative changes in the economic structure of a region, such as the cultural and psychological outlooks of the region's population, the organization of technology, and the changes in power relations within a region and between regions. Economic development is concerned with the ability of a broad

majority of a state's population to participate meaningfully in a state's economy. Proponents of the diverging interregional development model believe that while economic growth is a necessary condition for the successful development of a less-developed region, it is not a sufficient condition. In order for development to occur, according to this theory, the benefits of increased commodity production must be widely distributed among the population of an underdeveloped region. Proponents of this theory do not believe that increased interregional trade will automatically improve the welfare of the less developed region's economy. Rather, they contend that economic growth policies pursued alone will result in greater inequality.

"Economic development is concerned with the ability of a broad majority of a state's population to participate meaningfully in a state's economy."

It is worthwhile to examine some of the assumptions behind North Carolina's current development efforts. With regard to the efforts to change the industrial mix in the state, it is assumed that new jobs in higher-wage industries will provide an increase in the demand for skilled workers. Further, it is assumed that this increased demand will be sufficient to create pressure for higher wages in those jobs which presently exist in a local labor market. These higher wages for workers will in turn create more demand for consumer goods in the labor market, causing positive second round multiplier effects.

With regard to the state's efforts to raise the productivity of North Carolina workers, the following assumptions are applicable. First, it is assumed that there are jobs available requiring specific skills, and that the lack of these skills is presently the primary barrier between the available work force and these jobs. Second, the education and training provided by the programs instituted by the state government are presumed to be capable of making workers more productive. Finally, there is an implicit assumption that productivity increases will lead directly to increased wages.

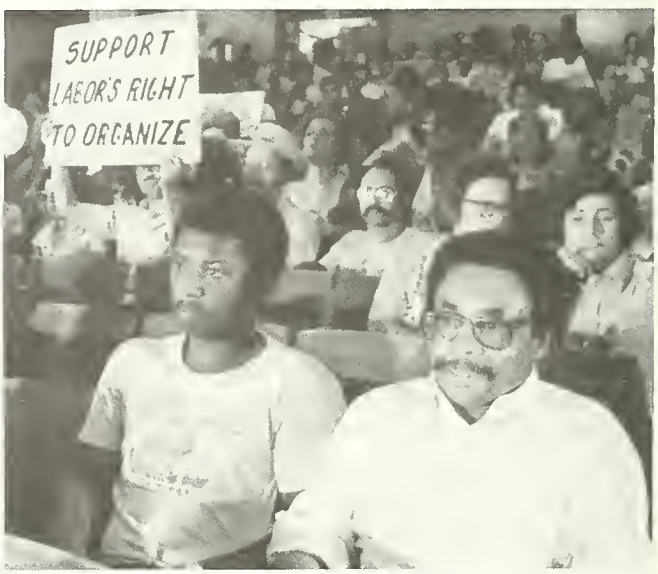
Generally, the development policies initiated by the state of North Carolina have been designed to follow the neoclassical economists' theory of interregional development. The state government has chosen to use the existence of low wages in North Carolina to encourage the relocation of industry from other areas of the United States and the expansion of North Carolina industry. By capitalizing on this comparative advantage of low labor costs and by improving the productivity of its workers, the state hopes to induce a better industrial mix and therefore indirectly raise the earnings and thus the welfare of the residents of North Carolina. In this sense, the state of North Carolina is relying on economic growth priorities to raise it from the condition of a less-developed region to that of a more-developed region.

Implications of North Carolina's Policy

There are indications, however, that these policies are misguided. Studies by Malizia (1975) and Malizia *et al.* (1975) indicate the inadequacy of these policies to raise the level of earnings for North Carolina workers. In the American economy, the great majority of people make their living by working for wages and salaries. Since almost all transactions are based on money exchange, these earnings provide people with the sole means of satisfying their needs. We can therefore observe the importance of earnings in defining the level of living possible for any group of North Carolinians. As real earnings rise, workers are provided with the means to satisfy a greater portion of their desires and needs through exchange in the market.

In examining the earnings potential provided by the state's economy, Malizia *et al.* examine two factors: the types of industry present in the North Carolina economy that affect earnings; and the specific wage levels paid by those industries. In order to take both of these factors into consideration, Malizia *et al.* used a modified shift-share analysis.

Shift-share analysis separates differences in average weekly earnings into that portion attributable to the relative predominance of various industries in North Carolina (industrial mix effect) and that portion attributable to differences in wages paid by those industries in the state (local effect). It was found that approximately 63% of the gap between weekly earnings in North Carolina and those in the United States as a whole was the result



Workers organize to attain higher wages and improved benefits.
Photo courtesy of *Southern Exposure*

of the local effect in the years 1963, 1969, and 1971 (Malizia 1975). North Carolina workers earned less than U.S. workers not because of the type of industries located in North Carolina, but largely because those industries paid lower wages to North Carolina workers than they paid workers in other states. Furthermore, productivity differences between North Carolinians and United States workers cannot account for this earnings gap. North Carolina has a high concentration of low-productivity industries, but the studies showed that North Carolina workers produce on the average $.22 more per dollar received than comparable U.S. workers (Malizia *et al.* 1975).

As we have noted, there are basic disagreements concerning the process of economic development. Some economists insist that growth inevitably leads to increases in welfare; others warn that growth may cause greater inequality. In this article, we assume that the aim of economic development is to improve the standard of living for a broad cross-section of a region's population; therefore, a strategy which brings increased economic activity but fails to reduce inequality is not acceptable.

"This model implies that high wages are associated with relative income and education equality, and with a more effectively organized trade union movement..."

Indicators of Growth and Development

We have posited that the distinction between economic growth and economic development is important in explaining the existence and persistence of regional inequality in the United States. This research empirically attempts to relate indicators of growth and development to wage levels in a cross-state analysis.

Dudley Seers has written that poverty, inequality, and unemployment are good indicators of the level of development in a region at a given point of time (Seers 1973). These indicators are directly related to the distributive principles associated with the concept of economic development. Arghiri Emmanuel states that while industrialization, technological advances and capital accumulation provide necessary conditions for the successful development of a region, rising wages provide the sufficient condition. He believes that development in a capitalist market system cannot occur until real wages begin to rise steadily, since the process of development relies on the growth of consumption rather than saving. Emmanuel claims that increased trade union pressure will drive up the acceptable level of real wages and the minimum acceptable standard of living and, in so doing, cause an increase in a region's level of development (Emmanuel 1972).

North Carolina's current policy is aimed at economic growth and improving the industrial mix of the economy, and shift-share analysis has shown that the majority of the variation in wage levels in the state is related to factors other than the Industrial Mix Effect. We have therefore examined the explanatory power of Seers' and Emmanuel's theories with regard to those variations in wages which are not explained by industrial mix. In order to accomplish this task, it was necessary to develop indicators of economic development as defined by Seers and Emmanuel. These concepts are complex; single referents are inadequate to measure them fully. The empirical analysis therefore took on a two-stage design.

The first step was to gather a large set of variables which seemed to measure the concepts suggested by Seers and Emmanuel. Indicators of income, of educational inequality, and of poverty were gathered in order to represent Seers' concepts. These included:

Inequality

1. Black Median Income as a Proportion of White Median Income
2. Black Median Education as a Proportion of White Median Education
3. Gini Coefficient of Income Distribution[2]
4. Median Education

Poverty

1. Percent Below Poverty Income

Unemployment

1. Percent Unemployed

Indicators of union organizations and activity were gathered in order to represent Emmanuel's major concept. These included:

Union Activity and Worker Organization

1. Percent of Manufacturing Workers who are Members of Unions (Stroup 1975)
2. Number of Workers involved in Work Stoppages per 1000 Workers (National Labor Relations Board 1973)
3. Presence of Right-to-Work Legislation (Stroup 1975)

In addition, a number of variables more closely related to traditional concepts of economic growth were collected. These included both direct and indirect measures, such as:

Productivity

1. Value Added per Worker Hour
2. Value Added per Wage Dollar

Urbanization

1. Percent of Population in Urban Areas

Finally, data on government involvement in social welfare expenditures was collected, including:

Government Expenditures

1. Per Capita Expenditures on Education
2. Per Capita Expenditures on Public Welfare

Unless otherwise noted, the data was collected from the City and County Data Book for 1972 (Bureau of Census 1973). This data was then analyzed using factor analysis.

Figure 1
Factor Loadings

	FACTOR I	*FACTOR* II	*FACTOR* III	*FACTOR* IV	*FACTOR* V
Gini of income	-.721	.339	.007	.166	.030
Black/white income	.194	.548	.503	-.111	-.296
Black/white education	.809	.092	.242	.062	.070
% below poverty	-.655	.116	.469	-.024	-.044
Median education	.707	-.036	.537	.125	.095
% unemployed	.071	.116	-.043	.077	.778
% unionized	.057	.925	.306	.071	.198
Work stoppages/1000 workers	-.653	.738	-.178	.341	.016
Right-to-work law	-.311	-.531	-.237	.162	-.113
% urban	-.030	.177	.674	.212	.041
Education exp./capita	.407	-.006	.662	.263	.352
Welfare exp./capita	.074	.081	.668	-.030	-.128
Value added/wage dollar	-.090	-.006	.032	.921	.014
Value added/hour worked	.161	.312	.289	.871	.182

Factor Analysis

Factor analysis is useful in combining the information provided by a number of variables which measure closely related concepts. The technique defines a new variable which is a linear combination of a number of other variables based on the pattern of the correlations. It is assumed that the new variable defined by factor analysis is responsible for the interrelations of the original variables. Factor analysis also separates into distinct factors those groups of variables which seem to be influenced by different underlying forces.

In the context of this article, factor analysis was used to test whether social welfare-related variables group identifiably along the dimensions suggested by Seers and Emmanuel while remaining distinct from a set of economic growth referents. The indices generated by the factor analysis are then used to predict differences in wage levels between states.

Five independent factors were generated by the factor analysis. Figure 1 gives the results of this phase of the research. The loadings of individual variables on the factors can be interpreted as the correlation of that variable with the factor (Nie *et al.* 1975).

If one assumes that loading of less than an absolute value of .500 denotes marginal contribution of the variable to the factor, the columns of Figure 1 can be simplified and a more definite pattern emerges.

Two factors seem to account for the dimensions hypothesized by Seers. These are Factors I and V. Factor I is most closely related to the degree of income and educational inequality and to the percent of the population below the poverty line:

Ratio of Black/White Education 809
Gini Coefficient of Income ..... -.721
Median Education 707
Percent below Poverty ..... -.655

Factor V loads highly on only one variable:

Percent Unemployed 778

These two factors measure Seers' economic development concepts in that Factor I is a poverty and inequality scale while Factor V is clearly an unemployment indicator.

All of our measures of Union Activity have loaded together in Factor II along with the Right-to-Work Legislation variable. Our second index on income disparity also loaded on this factor:

Percent Unionized 925
Work Stoppages/1000Workers 738
Right-to-Work Legislation ..... -.531
Ratio of Black/White Income 548

Factor II represents the level of trade union pressure as discussed by Emmanuel.

Factor III seems to be most clearly related to Urbanization. Urbanization is clearly associated with the traditional measures of the economic growth process discussed earlier. However, this factor also includes measures of Government Expenditures on Education and Welfare and a measure of Income Disparity. These variables relate to differences in the nature of socio-economic institutions, which are more closely associated with development theory than growth theory. The varibles associated with Factor III are:

Percent Urbanized 674
Education Expenditures/capita 662
Welfare Expenditures/capita.....669
Ratio of Black/White Income 503

Finally, the two measures of productivity load together on a single factor. Factor IV is therefore clearly related to traditional theories of economic growth:

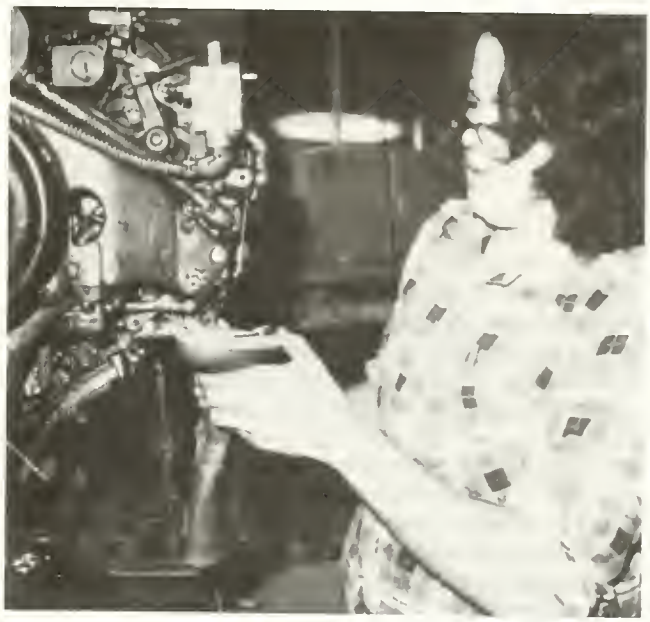
Value Added per Wage Dollar 921
Value Added per Hour Worked 871

Examining our results, we find three factors related to theories of economic development and two factors more closely associated with theories of economic growth. The factors seem internally consistent. In Factor I, increasing equality is directly related to the decreasing prevalence of poverty, as would be expected. In Factor II, increasing union activity is inversely related to the presence of Right-to-Work legislation. Right-to-work laws commonly discourage and impede organization of workers into unions. Factor III shows direct relationships between urbanization and government expenditures in the areas of education and social welfare. In Factor IV, the two measures of productivity are directly related to one another. Since only one measure of unemployment is included in Factor V, no internal inconsistencies exist.

The factors represent variables which are defined by factor analysis during the analysis of the data. They are assumed to be related to the underlying forces which influence the values of the original variables included in the analysis. The technique not only defines the structure and strength of these interrelationships, but also defines a value of the new variable for each state. Next we examined the usefulness of our factors in explaining wage differentials in the United States. For this purpose, we used multiple regression analysis.

Multiple Regression Analysis

Multiple regression is used to test whether we can predict the value of our dependent variable, interstate wage differentials, from knowledge of the values of our independent variables. This technique yields information regarding the strength, form, and reliability of the relationship between wage differentials and the development indicators we derived through factor analysis. The multiple coefficient of determination (R^2) shows the percentage of variation in wage differentials between states which can be explained by the development indicators. The Beta coefficient (b) is an estimate of the amount and direction of the change in wage differentials that would be expected for a one unit change in the relevant development indicator.[3] For instance, a Beta coefficient of 1.25 would suggest that wage differentials increase by $1.25 for every 1 unit change in the relevant predictor, while a Beta coefficient of -1.10 would indicate a decline of $1.10 for each increase of one unit in the predictor.



North Carolina's industry is dominated by labor-intensive plants.
Photo by Francis Hocutt, N.C. Dept. of Labor

A number of other coefficients can be examined in order to gauge the reliability of the relationship discovered. The *t*-statistic tests whether a Beta value as large as that found in the regression analysis could have occurred by chance. The *t*-values are compared to a table of standard values and the results are expressed as a level of significance. The level of significance is interpreted as the probability that the Beta value was the result of chance variation. The *F*-ratio for the equation is analogous to the *t*-statistic for each Beta coefficient. It is a measure of the probability that an R^2 as high as that obtained in the regression analysis could have occurred by chance. For the purposes of this particular analysis, a significance level of .01 will be required to reject the null hypothesis. In other words, unless the probability of obtaining these results by chance is greater than 1 in 100, we assume that the results of the regression are valid.

According to the studies by Malizia *et al.*, North Carolina's wage gap was largely attributable to the local effect. We decided to explore the predictive power of our development indicators in explaining this portion of the wage gap. The dependent variable of the model is the local effect on interstate earnings differentials. The independent or predictor variables are the factors generated in the previous step.

Economic development, as defined here, is clearly linked to distribution, while economic growth is

Figure 2
Preliminary Model Generated Through Multiple Regression Analysis

$\sum W_i^S / W_i^{US}$ = 5.09	-2.71 FI	-9.11 FII	-6.60 FIII	-2.05 FIV	-2.80 FV
standard error of b	(1.039)	(.974)	(1.056)	(.989)	(1.14)
t-statistic	(-2.603)	(-9.35)	(-6.25)	(-2.07)	(-2.44)

Adjusted R^2 = .77 Std. Err. of Est. = 6.69 F = 31.27 N = 48
b_1 ,b_2 ,b_3 ,b_5 significant at better than .01 level of significance.
b_4 significant at better than .05 level of significance.

Figure 3
Reestimated Model

$\sum W_i^S / W_i^{US}$ = 5.09	-2.78 FI	-9.30 FII	-6.71 FIII
standard error of b	(1.14)	(1.06)	(1.55)
t-statistic	(-2.44)	(-8.74)	(-5.80)

Adjusted R^2 = .72 Std. Err. of Est. = 7.32 F = 40.48 N = 48
b_1 ,b_2 ,b_3 significant at better than .01 level of significance.

related only to increased production. Therefore, we hypothesized that the development indicators would be better predictors of wage differentials than the growth indicators established during the factor analysis step. In interpreting the results of the multiple regression analysis, one must remember that the wage differential is expressed as a gap. Therefore, positive values of the dependent variables denote lower wage levels and negative values denote higher wage levels.

In performing the previous step of this analysis, an orthogonal rotation algorithm was employed (Nie *et al.* 1975). This means that the factors generated were by definition uncorrelated. Regression analysis assumes that the predictor variables are not highly correlated with one another, and by using the orthogonal rotation technique we assured compliance with this assumption. All of the factors were negatively correlated to wage differentials. This indicates that increasing values of the factors are associated with higher state wage levels. This conformed to our theoretical expectations in all cases except where higher unemployment was found to be associated with higher wages.

The next step was to fit an equation in the form:

$$\sum W_i^S / W_i^{US} = b_0 + b_1 FI + b_2 FII + b_3 FIII + b_4 FIV + b_5 FV$$

where:

W_i^S / W_i^{US}	=	Wage Differential (Local Effect)
FI	=	Inequality and Poverty
FII	=	Unionization
FIII	=	Urbanization and Government Expenditures
FIV	=	Productivity
FV	=	Unemployment
$b_1, \ldots, b_5$	=	Parameters to be estimated

We would expect the relationships to take on the following signs:

H1 : $b_1 < 0$
H2 : $b_2 < 0$
H3 : $b_3 < 0$
H4 : $b_4 < 0$
H5 : $b_5 < 0$

The null hypothesis is that:

Economic growth and economic development indicators will have no significant predictive power in explaining wage differentials, or:

H0 : $b_1, \ldots, b_5 = 0$

The model which was generated appears in Figure 2.

Seventy-seven percent of the variance in Wage Differentials was explained by the model. The direction of the relationships are as hypothesized in all but one case. Unemployment is still directly related to higher wages, in opposition to both our *a priori* expectations and Seers' theory. Since the relationship between productivity and wage differentials failed to attain a .01 level of significance, we cannot assume that the true population Beta coefficient is significantly different from zero. The unemployment and productivity factors were then dropped from the equation and the model was reestimated (see Figure 3).

"We believe that North Carolina is mistaken in its decision to concentrate the majority of its development efforts on changing the industrial mix present in the state."

Conclusions

This model implies that high wages are associated with relative income and education equality, and with a more effectively organized trade union movement, as would be expected from Seers and Emmanuel. It also shows that states characterized by higher levels of urbanization and government expenditures for social purposes are more likely to be high wage states. As we had hypothesized, both economic development and growth are related to higher wages. However, the economic development indicators seemed to have a closer relationship to wages than did the growth indicators.

As originally hypothesized, the concepts of economic growth and economic development are both important in attaining broadly-based, balanced regional development. However, a distinction can and must be made in order to understand why regional inequality exists in the United States. States in which development policies rely solely on economic growth objectives without giving appropriate consideration to the distribution impacts of this growth are likely to remain underdeveloped.

We believe that North Carolina is mistaken in its decision to concentrate the majority of its development efforts on changing the industrial mix present in the state. Further, these economic growth efforts have impeded the achievement of broad-based economic development in North Carolina. Since

these policies rely on the existence of low wages in the state and on discouraging worker organization through right-to-work legislation, they have blocked the possibilities of significant gains in earnings for the North Carolina worker. The studies by Malizia *et al.* have seriously questioned whether or not North Carolina's growth-oriented policy will ever benefit North Carolina and the United States as a whole, and North Carolina's relatively stable ranking as the forty-fifth of forty-eight states in average earnings, support Malizia *et al.*'s conclusions.

Our analysis has shown that worker organizations and concern for economic and educational equality are present in high wage states. It also indicates that these economic development indicators have a stronger role in explaining interstate earnings differentials than do indicators of economic growth. On the basis of these findings, we feel that the state of North Carolina must shift its emphasis to people-oriented development policies and should remove institutional barriers to worker organization that presently exist.

Policies which incorporate economic development concerns do not necessarily preclude the continued growth of North Carolina's economy. True development embodies elements of both ecomonic growth and economic develomment. The state must seek ways to change its present development policies so that they will no longer operate at the expense of the economic development concepts discussed herein.

The abandonment of wage suppression and the repeal of the right-to-work legislation may lead to lower rates of growth in the state's economy, for as wages rise, the state loses part of its relative advantage in recruiting new industries. The state must recognize, however, that its present development policies are operating at the expense of the North Carolina worker. Improvements in the industrial mix of the state have had no appreciable positive effects on closing the earnings gap (Malizia 1975).

The decision as to which development policy to pursue and which elements to emphasize is a difficult one at any level of government. Evidence has been presented to suggest that the current policy of the North Carolina state government is not improving the living conditions of the state's population. For this reason we urge the state to reconsider its policies and to take strong steps to insure that the broad majority of the state's workers will share in the benefits forthcoming from the state's economy.

Notes

1. The authors would like to acknowledge the support, encouragement, and help of a number of people without whom this paper would not have been written. Our thanks go first to Emil Malizia, whose research and teaching suggested this project, and to Ann Witte, who provided so much of herself in terms of methodological consultation. In addition, we would like to express our appreciation to Dianne Reid for giving us the benefit of examining her dissertation proposal.

2. The Gini coefficient is a measure of the degree to which a distribution differs from equal distribution. In this case the coefficient refers to the distribution of income. It varies between limits of zero and one. A coefficient of one would denote that all income in a region was earned by one person. A coefficient of zero would mean that all persons in the region earned the same amount. In practical research neither of these extremes will occur. For a more complete exposition, see Isard, Walter 1960. *Methods of Regional Analysis.* Cambridge: MIT Press.

3. The coefficient discussed here is the *un*-standardized Beta (*b*) coefficient, also known as the regression coefficient. This interpretation holds true as long as the independent variables are not highly intercorrelated and we assume that all other variables are held constant. The use of the coefficient "*b*"is employed here, as is done in SPSS. Some may recognize this as "β" as listed in other sources.

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